

The Longevity Skin Protocol: Biohacking Your Way to Age Reversal

Welcome to the biohacker's guide to skin rejuvenation. We're about to rewrite the rules of anti-aging skincare with the same high-impact mindset that launched the Biohacking movement. This isn't your mainstream "moisturize and hope for the best" advice; it's a **next-level playbook** blending cutting-edge longevity science, bold biohacks, and real-world execution. The target: men and women who want *flawless* skin and true biological age reversal, not just cosmetic band-aids. **Here's what the mainstream isn't telling you:** you can *upgrade* your skin's biology to unlock unfair advantages in the fight against aging. We'll prioritize the highest-leverage actions; from optimizing your cellular powerplants and youth-restoring molecules (think NAD⁺ and peptides) to hacking recovery and leveraging tech, all presented with Young Goose's signature innovation and clarity. Get ready to **biohack your way to younger skin**, with clear protocols, supplement stacks, recovery hacks, and tech-assisted upgrades that deliver maximum results for your effort. Let's dive in.

Why Traditional Approaches Fall Short (and How Biohacking Flips the Script)

Most skincare advice focuses on surface-level tweaks: a new cream here, a random laser session there. Those can help a bit, but they ignore a critical fact: **your skin is a dynamic organ driven by your body's internal biochemistry and cellular health.** Wrinkles, sagging, age spots, these are *symptoms* of deeper processes: slowed cell turnover, mitochondrial decline, collagen breakdown, glycation, and chronic inflammation. Mainstream treatments often try to "erase" signs of aging *after* the damage is done, instead of preventing or reversing the underlying causes. It's like mopping up water while the faucet's still overflowing.

The Young Goose biohacker's approach is different: we target the upstream drivers of skin aging; boosting cell energy, clearing out "zombie" cells, ramping up repair pathways; so that your skin *biologically* behaves like a younger person's. Then we strategically add potent topicals and devices at the right time, when your cells are primed to respond. By laying this foundation, even advanced interventions (like peels, PRP, or microneedling) yield far greater results than they would on an *un*-optimized system. In Bulletproof terms, we're addressing the "cause" instead of the "symptom," turning your skin cells into powerhouses of youth.

(Fun fact: in one study, scientists caused mice to develop wrinkles and hair loss within weeks by inducing mitochondrial dysfunction – then completely reversed those aging signs by restoring mitochondrial function. Aging isn't one-way; if you fix the cell's energy and repair systems, youth can return. Our protocol is all about tapping into that potential.)



Above: A breakthrough experiment from the University of Alabama at Birmingham – a mouse that developed gray hair and wrinkled skin due to mitochondrial dysfunction (center) was able to **regrow thick fur and smooth skin** (right) after mitochondrial function was restored . This dramatic reversal underscores how crucial healthy mitochondria are to youthful skin.

Biohack #1: Power Up Your Mitochondria (The Skin's Energy Engines)

If you want skin that behaves younger, **start with your mitochondria**. These tiny power plants in your cells produce ATP, the energy currency that drives cell turnover, collagen production, and DNA repair. [As we age, mitochondrial function declines; skin cells slog along, repairs lag, and visible aging accelerates.](#) Reversing that decline can yield astounding benefits. For instance, [researchers have shown that boosting mitochondrial activity can literally reverse wrinkles in animal models](#) . In human skin, robust mitochondrial function means more energy for **collagen synthesis, faster healing, and vibrant cell metabolism**.

How do we biohack our mitochondria for skin benefits? We attack from multiple angles:

- **NAD⁺ – The Youth Molecule:** NAD⁺ is a coenzyme that mitochondria *absolutely require* to produce energy and to activate vital enzymes (sirtuins and PARPs) for anti-aging and DNA repair. By our 40s and 50s, NAD⁺ levels plummet, leaving cells sluggish. Replenishing NAD⁺ can **ameliorate or even reverse many hallmarks of aging** and has been shown to extend lifespan in organisms from yeast to mice. For skin, emerging research is exciting: applying NAD⁺ or boosting it in skin cells protects against UV damage and intrinsic aging, especially when combined with compounds that inhibit NAD-degrading enzymes like CD38. [In one study](#), human fibroblasts treated with extra NAD⁺ were **much more resilient**; they resisted UV-induced aging, activated **sirtuins**, ramped up **autophagy**, and improved their mitochondrial performance . Translation: more NAD⁺ = cells that act younger.
 - **Biohacker's tip:** To raise NAD⁺, you can take precursors like NMN or NR as supplements (which your body converts to NAD⁺). Even simpler, use topical formulations that deliver NAD⁺ or its building blocks straight to your skin. For example, **Young Goose's line of products** is a longevity-focused line with an exclusive blend of NAD⁺ production stimulators, NAD⁺ precursors, and other actives to recharge cellular energy . It's been *rigorously tested* and shown to reduce wrinkles, pores, and age spots while restoring the skin's moisture barrier,

in large part thanks to that NAD⁺ power boost and ingredients like spermidine and copper peptides that we'll discuss later . Applying a NAD⁺-infused skincare daily is like giving your skin cells a fresh battery pack each morning. Many users report improved radiance and resilience as their cells “wake up.” (We'll cite more on NAD⁺ in a bit, but keep this in your toolkit.)

- **Support NAD⁺ with Synergists:** Simply flooding cells with NAD⁺ can help, but it's even more effective if you **prevent NAD⁺ depletion**. One reason NAD⁺ falls with age is the enzyme CD38 (a major NAD⁺ consumer) increases. The flavonoid **apigenin**, a compound found in chamomile, is a known CD38 inhibitor. Treatment with apigenin in studies *raised intracellular NAD⁺ levels* by blocking CD38 . Cool fact: the Young Goose **Adaptogenic Cleanser** is enriched with apigenin-rich chamomile extract specifically to help *increase NAD⁺ levels in the skin during cleansing* . It's a “game-changing” face wash that not only removes impurities but biohacks your skin at the same time . Start your routine with a cleanser that feeds your cells – *mainstream cleansers definitely aren't doing that!*
- **Lifestyle NAD hacks:** Fasting and exercise can also boost NAD⁺ and mitochondrial biogenesis by activating AMPK and Sirtuins. Even getting good sleep helps (NAD⁺ is synthesized on a circadian rhythm – poor sleep disrupts it). We'll cover sleep later, but keep in mind that the foundational habits (quality sleep, regular movement, not overeating) support your cellular NAD⁺ economy.
- **Mitochondrial Nutrients & Cofactors:** Give your mitochondria the raw materials and antioxidants they need to thrive. Key players include **CoQ10** and **PQQ**, which support the electron transport chain and even stimulate the growth of new mitochondria. Those benefits extend to the skin too, by energizing dermal cells. Another nutrient is **L-carnitine**, which shuttles fatty acids into mitochondria for fuel (and skin sebaceous glands love carnitine). **Alpha-Lipoic Acid (ALA)** is a potent mitochondrial antioxidant that can regenerate other antioxidants; it's a powerful anti-aging aid – consider it as an oral supplement for an extra mitochondrial boost.

Also worth highlighting is **ergothioneine**, a rare amino acid–derived antioxidant with a dedicated cellular transporter (OCTN1) that pulls it straight into mitochondria. There, it shields mitochondrial DNA from oxidative stress, helps maintain energy production, and protects structural proteins like collagen from breakdown. In skin, ergothioneine has been shown to improve resilience to UV stress and reduce visible signs of aging. Because our bodies can't make it, it must come from diet or topical application—and it's a core part of multiple Young Goose formulas, making mitochondrial protection effortless to integrate into your routine.

- **Red Light Therapy (Photobiomodulation):** If you're looking for a tech hack to directly supercharge mitochondria in the skin, red and near-infrared light therapy is your go-to. Red light at specific wavelengths penetrates into the dermis and is absorbed by

mitochondrial cytochrome c oxidase, which **increases ATP production and cellular metabolism**. The result? Studies show red light therapy can spur **fibroblast activity and collagen synthesis**, [improving wrinkles and skin elasticity](#). In fact, multiple blinded trials have found that consistent red light treatments “plump up” skin and reduce fine lines by boosting collagen. It’s also great for healing – for example, red light speeds up wound repair and reduces inflammation. You can use at-home LED panels or seek professional LED treatments.

- To amplify results further, combine red/NIR light with a topical that makes your skin more receptive. Young Goose’s **L.A.D.R. Serum** (Light-Activated DNA Repair serum) is specifically *optimized for red light synergy*. It contains a proprietary NAD⁺-APEX complex and DNA repair enzymes (“photosomes”) that harness light energy to [repair UV damage](#) at the cellular level. It also has ectoin and peptides to [strengthen the skin barrier](#) and lock in moisture. Essentially, it’s a serum that turns your red light therapy session into a collagen-boosting, mitochondrial-recharging treatment. **Apply L.A.D.R. Serum before you do red light therapy**, and you’re stacking two mitochondrial hacks together – the serum boosts mitochondrial activity and collagen response during light exposure for a youthful glow. This is the kind of unfair advantage layering that mainstream derms aren’t talking about yet.
- **Oxygen & Blood Flow:** Mitochondria need oxygen to crank out ATP. By improving circulation to your skin, you deliver more O₂ and nutrients to those cells. High-intensity exercise (the kind that gets your heart pumping) will increase skin blood flow. Ever notice the post-workout glow? That’s your mitochondria humming with fuel and your skin flushing out wastes. **Deliberate cold exposure or cryotherapy** can [paradoxically improve circulation](#) via rebound effect, and **heat therapy** like infrared sauna can bring [blood to the skin and induce beneficial heat-shock proteins](#) (which help repair misfolded proteins in mitochondria). Here at Young Goose, we’re fans of contrast therapy – try alternating hot sauna and cold plunge to vascularly “exercise” your skin. It can leave skin looking tighter and more radiant (and it’s a systemic longevity booster too).

In short, fueling and protecting your mitochondria is step one in age reversal. You’ll notice improved skin tone, faster renewal, and even changes like better hydration when your cell energy is up. Think of NAD⁺, red light, and mitochondrial nutrients as *upgrading the battery and engine* of your skin cells. With that foundation, we can move on to cleaning up cellular junk and boosting regeneration.

Biohack #2: Stimulate Cellular Cleanup- Autophagy & Detox for Your Skin

Before we pile on a bunch of growth factors and new collagen, we need to take out the trash. **Autophagy** is your cells' self-cleaning and recycling program; it literally means "self-eating," where [cells break down damaged components, misfolded proteins, and gunked-up organelles to reuse the parts](#). This process is absolutely critical for healthy, youthful cells. As we age, autophagy activity drops, and cellular junk starts accumulating, contributing to aging and degeneration. In skin, declining autophagy is linked to *premature aging*: pigment spots, slower turnover, and impaired barrier function. Here's the exciting part – if you **restore or boost autophagy, skin aging improves**. [A 2020 study found](#) that enhancing autophagy in aged skin explants *ameliorated skin integrity*, improving issues like hyperpigmentation and epidermal structure. They concluded that "restoration of autophagy can contribute to improving premature skin aging...via normalization of protein homeostasis". In other words, reactivate cellular housekeeping and the skin can literally **rejuvenate itself**.

So how do we biohack autophagy for better skin?

- **Intermittent Fasting & Caloric Modulation:** Fasting is one of the simplest yet most powerful autophagy triggers. When you take a break from constant eating (especially from carbs and protein), your insulin drops and AMPK rises, which signals cells to go into cleanup mode. Even a **12-16 hour overnight fast** (finish dinner early, skip late snacks, have breakfast a bit later) can stimulate autophagy in various tissues. Pushing to 24 hours or doing an occasional 2-3 day fast can super-charge the process – though that's an advanced move. Many biohackers practice **16:8 intermittent fasting** daily. The result: not only systemic benefits like [fat loss](#) and [mental clarity](#), but also [cellular renewal that reflects in the skin](#). Users often report a brighter complexion and reduction in inflammatory skin issues after adopting IF, likely due to reduced oxidative stress and increased autophagic repair in skin cells. (*Pro tip: If fasting sounds intimidating, start with **protein fasting** 1-2 days a week – consume your normal calories but from fat and veggies, with minimal protein. This can trick your cells into a partial autophagy activation by inhibiting mTOR without full calorie deprivation.*)
- **Autophagy-Boosting Foods & Supplements:** Certain nutrients can induce autophagy or mimic fasting effects. One superstar is **spermidine**, a polyamine found in foods like fermented wheat germ, mushrooms, and natto. [Spermidine has been shown](#) to extend lifespan in multiple organisms, largely by inducing autophagy. In skin, spermidine is a rockstar: [a recent study found](#) that spermidine (secreted by certain skin microbiome bacteria) helped *aged skin cells ramp up collagen and lipid synthesis*, effectively restoring dermal structure and barrier function. It achieved this by upregulating autophagy and renewal genes. **Green tea (EGCG)** also induces autophagy and has shown photoprotection benefits for skin. Consider a cup of high-quality green tea or an EGCG supplement daily (plus, it hydrates you). **Coffee** deserves a mention too: black coffee (without sugar) has been shown to stimulate autophagy, especially during a fast. Many biohacker's favorite morning beverage is famously black coffee with some healthy fats (i.e., Bulletproof Coffee), which can support a fasting period.

- **Topical Autophagy Activators:** Here at Young Goose, we clearly recognize spermidine's power; our **YOUTH Line of products** is infused with NAD⁺ precursors *and* spermidine to fuel the skin's natural repair processes . Using YOUTH products daily essentially feeds your skin cells a diet of youth enhancers: NAD⁺ for energy and spermidine to recycle and rebuild. Another one of our favourite compounds is **resveratrol** (we actually ferment it for better bioavailability!); it activate Sirtuin-1 which intersects with autophagy pathways, and helps reduce oxidative damage. Many of our formulations also include **Extremolyte Ectoin**. Ectoin is an amino acid derivative from extremophile organisms that helps protect proteins and has been shown to support cellular stress defenses (think of it as an osmoprotectant that can stabilize cell structures under stress). This essence essentially preps your skin by boosting its resiliency and priming autophagic cleanup, while also providing deep moisture.
- **Exercise and Sweating:** Moderate exercise has been found to induce autophagy in multiple organs – it's a natural response to the brief stress of workout. Skin, being richly vascularized and full of mitochondria in the dermis, likely benefits as well. Plus, when you sweat, you help purge waste from pores. Think of exercise as an internal and external cleanse. If you can do some of it outdoors, even better – you get sunlight (vitamin D and circadian syncing) which can improve skin function too. Just avoid sunburn; we're pro-sun in smart doses and *a/ways* protect after that threshold (more on sun protection later).
- **Cut Down On Toxins and Avoid Autophagy Blockers:** It should go without saying, but avoiding things that poison or burden your cells will help autophagy stay efficient. Excess alcohol, smoking, high sugar diets (glycation products impair protein turnover), these are autophagy's enemies. For instance, high glucose and high insulin states inhibit autophagy; chronic sugar intake also leads to cross-linked collagen (AGEs) that stiffen skin. A diet that's low in refined carbs and omega-6 processed oils, high in quality fats and antioxidants by itself, creates a pro-longevity metabolic state that favors repair over degeneration. It's basically a skin-friendly diet by default.

By stimulating autophagy, you're **clearing out the cellular junk** that causes dullness and dysfunction. Many people see reductions in mottled pigmentation or an improvement in skin texture once they incorporate fasting or spermidine, likely because the skin is literally detoxifying years of accumulated damage. [One study on photoaged skin](#) noted that when autophagy was impaired, pigment (melanosomes) accumulated; but enhancing autophagy actually helped *reduce age spots* by degrading excess pigment granules in keratinocytes. In plain terms: autophagy can lighten those spots and even out skin tone by cleaning up the cellular trash. How's that for a biohacking approach to hyperpigmentation? (Compare that to just bleaching the skin surface – we're fixing the root cause instead.)

And if you want a **real-world example of autophagy's power**: Consider that *during sleep* – particularly deep sleep, your body ramps up autophagy and growth hormone. That's when

cellular repair in the skin goes into overdrive. Skimp on sleep, and you shut down a lot of this nightly cleanup. Which leads us to...

Biohack #3: Prioritize Deep Recovery- Sleep & Stress Hacks for Skin Renewal

In true Young Goose philosophy, **recovery is key to performance**, and your skin is no exception. You can do all the fancy treatments in the world, but if you chronically sleep 5 hours a night or swim in stress hormones all day, your skin will struggle to regenerate. High stress and poor sleep literally *age your skin faster*. Don't take our word for it, there's hard data:

- [A clinical study by UH Case Medical Center](#) found that **chronic poor sleepers showed significantly more signs of skin aging**, poorer skin barrier function, and slower recovery from environmental stressors compared to good sleepers. In the experiment, they subjected participants to a simulated UV light exposure (a controlled sunburn) and a skin barrier disruption. The good sleepers healed **30% faster** from these skin insults than the poor sleepers. The poor sleepers also had more fine lines, uneven pigmentation, and reduced elasticity at baseline. Essentially, *sleep deprivation put their skin in an older state*. Good sleepers, by contrast, had better self-reported appearance and more youthful baseline skin metrics. The takeaway: **Sleep is the ultimate (free) anti-aging facial**. It's when your skin ramps up DNA repair, makes new collagen (growth hormone spikes at night), and clears out toxins via the lymphatic system. Make 7-9 hours of quality sleep non-negotiable. If you have trouble sleeping, address it as a core part of your skin strategy. Yes, your bedtime might matter even more than our expensive skincare products! Hacks to improve sleep quality include keeping your bedroom *cold and dark*, limiting blue light at night (use screens' night mode or blue-blocker glasses), maybe supplementing magnesium or glycine which can improve sleep depth, and managing stress in the evenings (try meditation or deep breathing, which lowers cortisol).
- Speaking of cortisol: **Chronic stress is a collagen killer**. When you're stressed, your adrenal glands pump out cortisol. Elevated cortisol over time breaks down collagen and elastin (the structural proteins of skin) and *slows* dermal fibroblast function. It also thins the skin (clinicians even use cortisol analogues – steroids – and see skin thinning as a side effect). One medical aesthetics source bluntly states: high cortisol levels "contribute to the breakdown of collagen and elastin". If you've ever seen someone go through a period of intense stress and notice they suddenly look older – this is why. So, managing stress isn't just good for your heart and mind, it's **visible on your face**. Techniques like HeartMath breathing, mindfulness meditation, yoga, or even just daily "untouchable" relaxation time (no emails, just something fun or calming) will lower baseline cortisol. Supplements like ashwagandha or phosphatidylserine can also help balance cortisol if it's chronically high. On the flip side, brief *hormetic* stressors – like exercise, sauna, cold – are beneficial because they induce repair responses. It's chronic psychological stress

that we want to minimize. Consider stress management as seriously as you consider your diet. Even **laughter and social connection** reduce stress – so yes, hanging out with friends or watching a comedy can count as a skin treatment!

- **Optimize Your Sleep Environment and Routine:** Biohackers go the extra mile here. Ensure your bedroom is **cool (around 65°F/18°C)** – a cooler environment induces deeper sleep and more slow-wave sleep (when growth hormone is released). Use blackout curtains or an eye mask so that *no* light disturbs your melatonin production. Melatonin, by the way, isn't just a sleep hormone; it's also a powerful skin antioxidant and may help with UV protection. If you have noisy surroundings, a white noise machine can maintain a steady auditory environment. Some advanced hacks: red-spectrum night lights (if you need to get up, so you don't suppress melatonin), **sleep tracking** devices to monitor your sleep stages, and even grounding sheets (some swear by the slight earth current to improve sleep, though that's anecdotal). These details might seem beyond skin care, but remember – **during deep sleep your body literally heals micro DNA damage and builds new skin**. If you sacrifice sleep, you sacrifice that healing.
- **Leverage Supplements for Recovery:** A few worth noting – **Collagen peptides** (taken orally) can work while you sleep to provide building blocks. A systematic review of 19 studies concluded collagen supplement users had **significantly improved skin elasticity and hydration** after 8-12 weeks. Many took their collagen daily (often mixed in coffee or smoothie). Taking collagen at night with some vitamin C might also support nighttime repair when collagen synthesis is up. Additionally, **glycine**, an amino acid abundant in collagen, has calming neurotransmitter effects and can improve sleep quality at 3g before bed. Conveniently, 3 grams of glycine is about what you'd get in a serving of collagen – see how these connect? Magnesium is another one – magnesium glycinate or L-threonate before bed can relax muscles and nerves, promoting deeper sleep (and magnesium is involved in over 300 reactions, including ones in skin metabolism). Finally, **adaptogens** like ashwagandha reduce stress and cortisol – you can take in the evening if stress is high, or use L-theanine (from green tea) for a calming yet not sedative effect.

By mastering sleep and stress, you effectively create the optimal internal *environment* for all your other skin hacks to work. Picture it like soil for a garden: you can plant the best seeds (serums, lasers, etc.), but if the soil (your hormonal and recovery state) is barren, you won't get great flowers. We want **fertile soil – low stress hormones, high sleep quality – so your skin can truly blossom**. And one more thing while we're here: avoid **smoking** at all costs. Smoking depletes vitamin C (needed for collagen cross-linking), reduces blood flow, and introduces a torrent of free radicals – it's basically a pro-aging nuclear bomb for skin. Studies have compared twins where one smoked and one didn't – the difference in facial aging is startling. So yeah, manage stress by means other than cigarettes!

How to Turn Your iPhone Screen Red to Reduce Blue Light Exposure

Using your iPhone's accessibility settings, you can shift your screen to a pure red tone. This dramatically reduces blue light, which can interfere with sleep and circadian rhythm at night. Once set up, you can enable it instantly by triple-clicking your side (lock) button.

Setup Instructions:

1. Open **Settings** → **Accessibility**.
2. Under **Display & Text Size**, tap **Color Filters**.
3. Switch **Color Filters** to **On**.
4. Select **Color Tint**, then set **Intensity** and **Hue** sliders all the way to produce a deep red screen.
5. Go back to **Accessibility**, scroll down, and select **Accessibility Shortcut**.
6. Choose **Color Filters** from the list.

How to Use:

- Triple-click the side (lock) button any time to toggle the red screen on or off.

This makes it easy to protect your eyes and minimize blue light exposure with a single action—perfect for evening device use.

Biohack #4: Clear Out the “Zombie Cells”- Senolytics for Youthful Skin

Ever heard of zombie cells? In biohacker terms, “zombie cells” refer to **senescent cells**; cells that have stopped dividing due to stress or DNA damage but refuse to die. They just sit there, metabolically active, spewing out inflammatory and degradative molecules (the SASP- Senescence Associated Secretory Phenotype) that harm neighboring cells. [In skin, senescent fibroblasts](#) are a big problem: they *secrete MMPs (matrix metalloproteinases) that chew up collagen and elastin*, and pro-inflammatory factors that break down the skin's support matrix. Essentially, a few senescent cells can make the whole cellular neighborhood old and inflamed. As we age, our bodies accumulate more of these senescent cells in tissues (including skin).

They are a key driver of aging and chronic inflammation. Clearing them out or neutralizing their bad secretions has become a hot strategy in longevity science.

In fact, one reason older skin heals slower and has more wrinkles is the presence of senescent cells that are gumming up the works. Conversely, if you remove senescent cells from an old organism, it often shows *improved tissue function and regeneration*. There's evidence in mouse studies that wiping out senescent cells can lead to younger, more elastic skin and better hair growth. While we can't yet selectively purge them at will in humans (senolytic drugs are under development and in early trials), we can use known compounds and lifestyle strategies to **reduce senescent burden**:

- **Senolytic Phytochemicals:** The most famous are the flavonoids **quercetin** (found in capers, onions, berries) and **fisetin** (found in strawberries, persimmons). These have senolytic activity – meaning they can trigger apoptosis (death) in senescent cells while sparing normal cells. In rodent studies, a high dose of fisetin cleared a significant portion of senescent cells, leading to increased healthspan. Human studies are just beginning (with periodic dosing protocols, since you wouldn't take these daily at senolytic levels, but rather as a “flush”). However, even at nutritional doses, quercetin and fisetin are likely doing some good by reducing the SASP inflammatory factors. You can integrate these by taking a supplement (some longevity stacks now sell fisetin capsules for exactly this purpose) or eating a cup of strawberries and an onion in your salad – but supplements will get you a higher concentration. **Apigenin** (from chamomile, as mentioned earlier) is interesting here too, because by inhibiting CD38 and raising NAD⁺, it indirectly helps maintain youthful function and may discourage cells from becoming senescent (since one cause of cellular senescence is DNA damage that can't be repaired due to low NAD⁺/low sirtuins, apigenin helps keep NAD⁺ up for repair). Many of the **polyphenols** found in colorful plant foods, resveratrol, EGCG, curcumin, have anti-inflammatory and possibly senomorphic effects (meaning they can tone down the bad secretions of senescent cells). Consider a diet and supplement regimen rich in these, it's like creating an inhospitable environment for zombie cells. **Spermidine** is emerging as a key player in this arena, not just for its autophagy-boosting chops, but for its indirect senolytic support. [Spermidine promotes autophagy](#), the cell's recycling system, which helps remove cellular waste and reduces senescence triggers. Multiple studies show spermidine extends lifespan in yeast, flies, worms, mice, and human immune cells by activating autophagy and reducing inflammation—and it helps preserve mitochondrial function and stem cell vitality. In fact, an expert longevity review notes that “spermidine's role in autophagy and cellular renewal complements fisetin's ability to remove senescent cells,” offering a **synergistic anti-aging combo**.
- **Senolytic Fasts or Protocols:** Recall we discussed fasting and autophagy. Longer fasts (48-72 hours) trigger something called *apoptosis* in weak, damaged cells – which often means senescent cells get cleared out. There's a concept in longevity medicine of doing a yearly or quarterly “senolytic fast” or a fasting-mimicking diet to cull the senescent cell population. If you're metabolically and medically able, doing a 3-5 day water fast or using a structured program like Valter Longo's Fasting Mimicking Diet can have a profound

reset effect. Many people report that after such fasts their skin looks noticeably fresher – likely because of reduced inflammation and perhaps turnover of old cells. If a full fast is too intense, even intermittent fasting combined with a senolytic supplement “hit” (e.g. a high-dose fisetin + quercetin two-day regimen, which some experimentalists do under doctor guidance) could be considered. Obviously, research here is ongoing, and any aggressive senolytic therapy should be done carefully (and not if you’re pregnant, breastfeeding, etc.). But keep an eye on this field: one day we might have topical senolytics – imagine a cream that selectively clears senescent fibroblasts in your skin. Until then, systemic approaches are our tool.

For a deeper dive into building your own fasting mimicking diet, we highly recommend Quantified Bob’s article; [Mimicking the Fasting Mimicking Diet](#)

Here’s a **5-Day Fasting-Mimicking Diet (FMD) Protocol** based on Valter Longo’s research and Real-World experiments shared by Quantified Bob, tailored for a structured, biohacker-friendly routine:

5-Day FMD Protocol: Retune Your Biology, Rejuvenate Your Skin

Overview & Goals

The FMD is a short-term, plant-based, low-calorie diet that mimics the benefits of a water-only fast while still providing essential nutrients. It triggers autophagy, reduces biological age, decreases visceral fat, and boosts metabolic and immune health, **without complete food deprivation**.

Daily Structure & Macros

- **Day 1:** 4.5–7 kcal per lb of body weight — ~ 10% protein, 56% fat, 34% carbs.
- **Days 2–5:** 3–5 kcal per lb — ~ 9% protein, 44% fat, 47% carbs.

Sample Calorie Totals (for 150 lb person)

- **Day 1:** ~770 kcal
- **Days 2–5:** ~515 kcal per day

What to Eat

FMD is strictly **plant-based, low protein, low carb, moderate fat**, with minimal sugar.

Focus on:

- Healthy fats: avocado, olive oil, nuts, coconut oil
- Complex carbs: low-glycemic veggies, berries, limited starchy veggies
- Supplements or soups for micronutrients
- Hydration: water, chamomile tea, minimal black coffee (max one cup, if tolerated)

Proposed Daily Menu Framework

Day	Calories (150 lb)	Protein %	Fat %	Carbs %
1	~770 kcal	10%	56%	34%
2–5	~515 kcal	9%	44%	47%

Example Foods:

- **Soups:** Pureed broccoli/avocado with peach/berry powder and olive oil
- **Snacks:** Handful of almonds, olives, or chia-seed “pudding”
- **Supplements:** Multivitamin + mineral mix, omega-3
- **Hydrate:** Winter squash, berries, herbal tea

Protocol Schedule

- **Morning:**
 - Water + pinch of sea salt
 - (Optional) Black coffee or chamomile tea- limit to one cup to preserve FMD benefits
- **Mid-day Meal** (Day-appropriate calorie and macro)

- **Evening Meal:** Likewise balanced; include healthy fats for satiety
- **Snacks:** Small portions of macronutrient-appropriate foods (e.g. avocado, nuts)
- **Hydrate frequently** (1.5–2L water/day)
- Rest, gentle movement (walking, stretching); avoid intense workouts, especially Days 2–3

Summary Protocol Steps

1. **Determine your weight** → calculate target calories (Day 1 and Days 2–5).
2. **Plan plant-based meals** compliant with macro targets each day.
3. **Hydrate intentionally**- water, herbal tea, electrolyte support if needed.
4. **Rest and recovery**- prioritize sleep; avoid strenuous exercise.
5. **Resume normal eating post-Day 5**, focusing on whole, plant-rich meals; optionally repeat monthly.

Here's a **5-Day Fasting-Mimicking Diet (FMD) meal plan** for a **150 lb person**, based on the calorie and macronutrient targets from Valter Longo's protocol and Quantified Bob's breakdown.

Overview

- **Day 1 target:** ~770 kcal (10% protein, 56% fat, 34% carbs)
 - **Days 2–5 target:** ~515 kcal (9% protein, 44% fat, 47% carbs)
 - All plant-based, low-protein, low-sugar, moderate-to-high healthy fats
 - Hydration: 2–3 L water/day + herbal teas; minimal coffee (1 cup max)
-

Day 1 (~770 kcal)

Breakfast

- 1 cup herbal tea (chamomile or green tea)
- ½ avocado with 1 tsp olive oil, sprinkle of sea salt
- 8 almonds

Lunch

- Broccoli-cauliflower soup (steamed and blended with 1 tbsp olive oil, herbs)
- ½ cup zucchini noodles sautéed lightly in coconut oil

Snack

- 5–6 olives + 1 tbsp chia seeds soaked in water or tea

Dinner

- Steamed spinach & mushrooms drizzled with 1 tsp olive oil
 - ¼ cup roasted butternut squash
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Day 2 (~515 kcal)

Breakfast

- Hibiscus tea
- ¼ avocado + 1 tsp olive oil
- 6 walnut halves

Lunch

- Pureed tomato-basil soup (made with ½ cup low-sodium vegetable broth, 1 tsp olive oil)

- ½ cup lightly steamed asparagus

Snack

- 1 tsp almond butter
- 4 olives

Dinner

- Steamed kale with lemon
 - ¼ cup roasted carrots
 - 1 tsp olive oil drizzle
-

Day 3 (~515 kcal)

Breakfast

- Green tea
- ¼ avocado + 1 tsp olive oil
- 6 almonds

Lunch

- Zucchini & spinach soup with 1 tsp olive oil
- ½ cup steamed cauliflower

Snack

- 1 tsp chia seeds hydrated in herbal tea
- 3–4 olives

Dinner

- Roasted broccoli & mushrooms (light olive oil spray)
 - ¼ cup baked acorn squash
-

Day 4 (~515 kcal)

Breakfast

- Peppermint tea
- ¼ avocado with sea salt
- 5 walnut halves

Lunch

- Cabbage & celery soup with 1 tsp olive oil
- ½ cup steamed green beans

Snack

- 1 tsp almond butter
- 3 olives

Dinner

- Wilted spinach with garlic (no oil, just steam)
 - ¼ cup roasted carrots
 - 1 tsp olive oil drizzle
-

Day 5 (~515 kcal)

Breakfast

- Chamomile tea
- ¼ avocado + 1 tsp olive oil
- 6 almonds

Lunch

- Broccoli-spinach soup (pureed, with 1 tsp olive oil)
- ½ cup zucchini noodles sautéed in a non-stick pan

Snack

- 1 tsp chia seeds soaked in water or tea
- 3 olives

Dinner

- Steamed kale with lemon
- ¼ cup roasted butternut squash
- 1 tsp olive oil drizzle

Refeed Guidelines (Day 6)

- Break the fast with light, plant-based whole foods (steamed vegetables, small fruit serving, vegetable soup)
- Gradually add legumes and whole grains by the second meal
- Avoid heavy animal proteins and processed foods for at least 24 hours

- Optimize Your Antioxidant Status:** Senescent cells create oxidative stress; conversely, oxidative stress can induce senescence. Antioxidants help break this vicious cycle. Classic skin antioxidants like **mineral-bound vitamin C** and **vitamin E** are important: Vitamin C is not only an antioxidant but also a cofactor for collagen synthesis – your fibroblasts literally can't lay down new collagen without it. A diet rich in C (bell peppers, citrus, camu camu) plus possibly a supplement (or a vitamin C serum, like Youth Reset, topically) is foundational. Vitamin E (mixed tocopherols/tocotrienols from nuts, seeds, palm, etc.) helps stabilize cell membranes. **Glutathione**, the master antioxidant, declines with age; consider precursors like N-acetylcysteine (NAC) or liposomal glutathione supplements to keep your detox and repair capacity high (YG's Youth line of products, L.A.D.R. Serum and Hyperbaric mask contain ingredients shown to increase Glutathione levels topically). **Ergothioneine** is another potent antioxidant that not only protects mitochondria but has been shown to help raise glutathione levels in cells, further strengthening the skin's defense system. It is transported directly into cells (via the OCTN1 transporter), concentrates in areas of oxidative stress, and provides sustained protection against UV- and pollution-induced free radicals. Also, **selenium** (from Brazil nuts or a supplement) boosts glutathione peroxidase – low selenium is linked to age-related skin changes. A comprehensive antioxidant strategy will mitigate the inflammatory environment that lets senescent cells thrive. Think of it as *taking away the "Molotov cocktails" from the zombie cells* so they cause less collateral damage.
- Cutting-Edge Peptide Therapies (Experimental):** Some biohackers are venturing into peptide injections like **FOXO4-DRI** or **Procaine** derivatives that are being studied as senolytics, but these are not clinically approved and are very much try-at-your-own-risk. We mention them only to say: the fact that people are self-experimenting in this area underscores how important senescent cells are believed to be in aging. On a more practical note, it's worth mentioning that some topical and professional skin approaches already incorporate compounds shown in research to influence senescence. For example, Young Goose offers topical formulas containing ingredients known to support cellular renewal, reduce the burden of senescent cells, and improve skin function. There are also YG professional treatments, that draw on senescence-targeting research to help "reset" the skin and make space for newer, more functional cells. We're still a long way from "senolytic injections at the med spa" being standard practice, but for now, these gentler, better-understood options give us a way to start addressing the problem without straying into risky, unproven territory.

One more *natural* senolytic method: **intense exercise**. There's some evidence that exercise prompts the immune system to clear out senescent cells (via increased NK cell activity). High-intensity interval training (HIIT) in older adults has been shown to induce a more youthful

gene expression profile in cells, possibly related to senescence pathways. At the very least, exercise helps with *immune surveillance*, meaning your body is better at eliminating dysfunctional cells. So add that to the list of reasons to break a sweat.

By reducing your senescent cell load, you'll create a more **youthful cellular environment** in the skin. Imagine your skin as a workplace – if half the workers are “zombies” who don't work and just throw garbage around, the office (skin) won't function well. Clear out those slackers and the productive workers (healthy cells) can really shine. Practically, you may notice improved skin *density* and firmness (as collagen breakdown slows), less chronic redness or irritation (since SASP inflammatory cytokines are reduced), and better responsiveness to treatments (because now most of your cells are robust and can divide and produce new matrix).

By this point, we've covered ensuring cells have energy (mitochondria/NAD⁺), are cleaned up (autophagy), and the toxic troublemakers are minimized (senescent cells). Now it's time to **build!** to actively stimulate new collagen, elastin, and hyaluronic acid, and to protect the new gains. This is where we deploy the big guns: growth factors, peptides, and strategic “damage-and-repair” interventions that prompt the skin to rejuvenate itself in a controlled way.

Biohack #5: Rebuild and Upgrade: Collagen Stimulators, Peptides, and Regenerative Therapies

Now we get to the fun part, actively reversing visible aging by **building new youthful structure** in the skin. Think of your skin like a house: we've fixed the electrical (mitochondria), cleaned out the old junk (autophagy) and termites (senescent cells), so now we can renovate and add new fresh paint and beams (collagen, elastin, healthy cells). There are a few major strategies here:

- **Retinoids, The Classic Rebuilder:** Any biohacker's skin guide would be incomplete without retinoids (vitamin A derivatives). Retinoic acid (prescription tretinoin) has mountains of research showing it can literally **reverse fine wrinkles, increase collagen in the dermis, and normalize skin cell differentiation**. It works by binding nuclear receptors in cells, turning on genes that boost collagen production and accelerate cell turnover. The downside: traditional retinoids can be irritating (red, flaky “retinoid uglies” for a few weeks). That's why alternative formulations like **retinol, retinaldehyde, and retinol-like botanicals** have become popular, they give gentler results. Young Goose's **Bio-Retinol** is a concentrated anti-aging serum that uses a novel form of liposomal retinol alongside nourishing lipids . It's *formulated to firm skin and reduce wrinkles and pores while fading age spots and evening tone without the usual peeling or irritation* . Think of it as retinol on smart mode. Use a serum like this at night (that's when skin does a lot of repair) to consistently trigger renewal. Over time, a bio-retinol will improve texture, reduce fine lines, and even help with acne by speeding cell turnover. It's an **essential in the “advanced stack”** for skin biohackers. If you can tolerate prescription tretinoin and want to go hardcore, by all means, but many find the new-gen retinols achieve the goal with less inflammation (remember, chronic irritation can age skin too).

- **Growth Factors and Cytokines:** Our cells communicate with signals, and as we age the signals for growth and repair dwindle. Enter growth factors: proteins like EGF, FGF, and TGF-beta, which can stimulate fibroblasts to produce collagen, encourage cell division, and improve wound healing. Some advanced professional products include bioengineered growth factors or employ methods to trigger your own. For example, some microneedling pens infuse growth factor serums. A more direct approach is PRP, also known as the “vampire facial.” Blood is drawn, platelets concentrated, and then either injected or applied during microneedling. PRP is rich in growth factors that can jumpstart a healing response, leading to new collagen and blood vessels. In clinical usage, PRP combined with microneedling significantly improves texture and elasticity. One trial found that PRP added to microneedling sped up collagen deposition compared to microneedling alone.

Science is now moving beyond growth factors into an even more advanced category of cell communication called exosomes. These are nanosized biological couriers that deliver concentrated instructions directly between cells. Inside these vesicles are proteins, lipids, and RNA that can tell your skin to increase collagen production, preserve elastin, calm inflammation, and repair damage. Because exosomes can deliver a broader range of regenerative signals than growth factors alone, they have the potential to create a more complete rejuvenation effect.

Today's exosome serums are most often used after procedures like microneedling or laser to speed recovery and reduce redness. While many people report faster healing or a more noticeable glow, results in the current market are inconsistent. Concentrations vary widely, the quality of the regenerative messages they carry depends on the cell source, and many formulas do not preserve exosome integrity all the way to the point of skin absorption.

At Young Goose, we are working toward a standard where exosomes deliver not just mild post-treatment recovery, but visible structural changes to the skin. This requires three things. First, a high enough concentration of active exosomes to trigger a meaningful regenerative response. Second, the use of sources that produce exosomes rich in collagen-building, elastin-preserving, and antioxidant signals. Third, a formulation and delivery system that keeps them biologically active until they reach the skin. When all of these elements come together, exosomes can move from being an interesting add-on to a breakthrough in skin regeneration. Until that point, we see them as a powerful frontier that is worth refining before being widely recommended.

If you have optimized your skin's internal environment as we have outlined, doing a PRP treatment is like adding rocket fuel. Your primed cells will respond vigorously to those growth signals. Because PRP and microneedling induce temporary inflammation to stimulate repair, it is ideal to do this after a cycle of autophagy and senolytic boosting, when you have cleared out old cells, and while your NAD⁺ levels are high. Some people will do a three-day fast to boost autophagy, break the fast with a nutrient-rich diet, take NMN and spermidine supplements for a week, apply Young Goose's Youth line of

products daily, and then do a microneedling and PRP session. Many report that healing and results are dramatically better because the skin is in a youthful metabolic state before the controlled trauma. This is how we make clinical options timing-sensitive for maximum benefit.

- **Peptide Power:** We've touched on some peptides (like copper peptide GHK-Cu) but let's dive deeper. Peptides in skincare are short sequences of amino acids that can signal cells to do specific things – often to produce collagen or reduce muscle movement (like “Botox-like” peptides). **Copper Tripeptide (GHK-Cu)** is perhaps the most well-known skin peptide: it's naturally occurring in the body and involved in wound healing. Studies have shown GHK-Cu can firm skin, improve elasticity, and soften wrinkles. In fact, [one study found](#) a GHK-Cu cream improved fine lines **similar to prescription tretinoin** over 12 weeks, but without irritation, and even increased dermal collagen synthesis. It also has antioxidant and anti-inflammatory effects. In the protocols provided in this book, the YOUTH products contain an “Enhanced Copper Peptide Complex” – that's GHK and friends working to rejuvenate skin daily. Using copper peptide serums after microneedling or in your nightly routine is a great idea to *signal your skin to rebuild*.
 - **Other peptides:** **Matrixyl** (palmitoyl pentapeptide-4) is like a personal trainer for collagen and fibronectin production. **Argireline** (acetyl hexapeptide-8) works on the neuromuscular level to help facial muscles relax, softening expression lines over time. **Palmitoyl tripeptide-1** tells the skin to make more collagen types I and III, the same structural proteins that keep it firm and youthful. These are the kinds of molecular signals that matter when we want real, measurable change, not just a surface-level boost. One of the peptides we are most excited about, **Tetrapeptide-4**, has shown the ability to boost collagen, elastin, and fibronectin production significantly better than Matrixyl or Palmitoyl tripeptide-1, while visibly lifting facial contours and reducing wrinkle depth. It even helps the skin recover from and protect against blue light stress from constant screen exposure. We include it in our Hyperbaric Mask so that while you are deeply hydrating and driving oxygen-boosting actives into the skin, you are also programming your fibroblasts to rebuild a stronger, more youthful extracellular matrix. Our Eye C.A.R.E. formula takes the same philosophy to the delicate skin around the eyes. By boosting NAD⁺ and delivering targeted peptides, it signals the skin to tighten, brighten, and smooth, giving visible improvements where aging shows first. The same approach is behind our Youth Firming Neck & Chest formula. This area is thin, often neglected, and constantly fighting gravity. By feeding it a potent peptide blend, we give it the structural reinforcement it needs to stay lifted and resilient. If you are over forty, these are simple, stackable upgrades you can add to your routine right now. Over months and years, the benefits compound, helping you keep your skin operating at its highest potential for as long as

possible.

- **Systemic Peptides:** Topical peptides are powerful, but some people take it a step further and work with advanced clinicians who use peptides systemically to influence the entire body. These are often injectable or oral and are aimed at enhancing regeneration from the inside out, which can also show up in the skin.

Growth hormone secretagogues like CJC-1295 paired with Ipamorelin can stimulate your body to release more growth hormone, which in turn can improve skin thickness, elasticity, and healing capacity. Peptides such as Thymosin Beta-4 (often referred to as TB500) and BPC-157 are well known in sports medicine circles for accelerating tissue repair. Epithalon has been studied for its effects on telomere length and stem cell support, which may translate into better resilience and youthfulness in the skin.

Even GHK-Cu (AKA copper peptides), which is more commonly known for topical application, can be delivered systemically. When used this way, it may help the body repair connective tissue, improve wound healing efficiency, and support collagen production from the inside, complementing the work of a well-formulated topical copper peptide skincare like Young Goose. Combining internal support with an external signal can create a synergistic environment where the skin is receiving constant cues to rebuild, regenerate, and maintain structural integrity.

This category of peptides is not for beginners. Systemic protocols require precise timing, dosing, and monitoring to get the most out of them. If you have not already optimized your sleep, nutrition, and topical skincare routine, that is where you should focus first. Once the fundamentals are in place, systemic peptides can become a next-level tool in a comprehensive longevity strategy for the skin and the rest of the body.

- **Collagen Boosting from Within:** If we want skin that stays firm, hydrated, and smooth, we cannot just apply a cream and walk away. We need to feed our fibroblasts, the collagen-making machines in our dermis, with the right building blocks and protect them from the biochemical junk that breaks them down. When we do this right, our skin can act like it is years younger. Collagen support is not only about protein powder. We can take collagen peptides, preferably hydrolyzed for better absorption, because clinical trials show they increase skin elasticity and hydration in as little as 8 weeks. We stack them with vitamin C, which is essential for collagen synthesis, and silica to activate the enzymes that weave collagen fibers together. We add hyaluronic acid for deep hydration that works from the inside out to bind water in our dermis and plump skin. The real upgrade comes when we create a multi-pathway stack that addresses every angle of collagen health.

Collagen Biohacker Stack

Ingredient	Key Mechanism	Research-Backed Skin Benefits	Dosage (Human Studies)
Eggshell Membrane Collagen	Provides multiple collagen types (I, V, X) and growth factors	Improves firmness, elasticity, and hydration in ~6 weeks	300–400 mg/day
Aloe Sterols	Stimulates collagen + hyaluronic acid synthesis	Boosts elasticity, moisture, and reduces wrinkle depth	~19 µg/day
Sicilian Red Orange Extract	Delivers photoprotective antioxidants	Reduces pigmentation and improves elasticity	~100 mg/day
Astaxanthin	Powerful mitochondrial antioxidant	Enhances hydration, elasticity, and protects collagen from UV damage	4–6 mg/day
Hyaluronic Acid (oral)	Binds moisture in the dermis	Improves hydration, reduces wrinkle appearance, increases elasticity in ~12 weeks	120mg/day
Ergothioneine	Raises glutathione and protects mitochondria	Shields skin cells from UV and oxidative damage	(cell studies at 50 µM)
Bioavailable Silicon	Activates collagen-forming enzymes	Improves firmness, hydration, and elasticity over 84 days	~14 mg/day

Vitamin K2 (MK-7)	Prevents elastin calcification	Maintains flexibility and youthfulness of tissues	≥ 100 µg/day
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We layer these with other foundational anti-aging compounds in our regimen, such as NAD⁺ precursors for cellular energy, spermidine for autophagy and renewal, ergothioneine for mitochondrial and glutathione support, and senolytic phytochemicals like quercetin, fisetin, and apigenin to help clear out senescent cells. This combination primes our skin to build new, high-quality collagen and maintain it.

This is not just collagen support. This is transforming our dermis into a high-output collagen factory with a built-in defense system to protect every fiber we produce. That is how we bulletproof our skin from the inside out.

- Microneedling and Controlled Trauma:** It may sound counterintuitive, but one of the best ways to spur new collagen is to *create micro-damage that triggers healing*. Microneedling (using a device with tiny needles to puncture the skin at a controlled depth) causes the skin to produce growth factors and lay down new collagen as it repairs the micro-channels. It's like tricking the skin into thinking it needs to heal a wound, and in doing so, it remodels scars and wrinkles from the inside out. A [systematic review](#) confirms microneedling is a **safe and effective method to improve wrinkles, scars, and overall skin texture**. For the biohacker at home, there are dermarollers and automated microneedling pens. *Caution:* At-home devices should be used with care (sterility and not going too deep). Professional microneedling can penetrate deeper (and often combines PRP as mentioned). Many dermatologists and facial plastic surgeons now embrace microneedling as a key anti-aging tool, often recommending a series of treatments spaced a month apart. If you go this route, **load up on your skin nutrition before and after**, e.g., use your Young Goose YOUTH Reset serum after needling for enhanced penetration and effect. Microneedling essentially opens channels for topicals to seep in better (just ensure whatever you apply after is sterile/clean formula since it will get deeper – again, a reason to use well-formulated products like the YG serums which are designed for safe absorption). And don't forget to take some extra vitamin C (Sodium Ascorbate form is preferred) and protein in your diet in the weeks after to support the collagen-building.

Biohack #6: Work With Professionals: Laser and Energy Devices and Peels, used judiciously

Bottom line first. Extraordinary devices cannot rescue a depleted biology. Dial in the foundations before you book anything in-office. That means consistent sun discipline, nutrient-dense protein and micronutrients, quality sleep, smart supplementation, and a daily routine built around antioxidants, vitamin A, barrier support, and Young Goose actives like our NAD⁺ and peptide serums. Once those are steady habits, advanced modalities can enhance what you have already built.

Our stance on RF and HIFU

We discourage radiofrequency and high-intensity focused ultrasound, including brands like Ultherapy and Morpheus8. These tools create thermal injury that can stimulate new collagen, yet much of that remodeling is fibrotic in character, which behaves more like scar tissue than youthful extracellular matrix. Skin may look tighter and lifted in the short term. That early change often reflects inflammation and fluid shifts from tissue trauma, not durable architecture. As inflammation resolves over several months, the net gain can be subtle while the tissue becomes a little stiffer and biologically older in behavior. This is not aligned with a longevity-first approach, so we do not recommend RF or HIFU for people focused on long-term skin health.

What we do recommend, when the foundations are solid

Fractional resurfacing lasers are the workhorse for texture, pigment, and fine lines. They create micro-columns of controlled injury that the skin repairs with higher-quality remodeling, especially when your biology is well nourished.

Below is a simple guide to common light and laser options. Use it to discuss plans with a qualified provider.

Modality	What it targets	Typical results	Downtime	Notes
IPL (intense pulsed light, not a laser)	Sun spots, redness, telangiectasias	More even tone	Minimal to mild	Great for pigment and vascular redness. Not ideal for melasma-prone skin.

Vascular lasers (PDL 595 nm, Nd:YAG 1064 nm)	Facial veins, rosacea flushing, redness	Less redness, fewer visible vessels	Minimal to mild	595 nm for superficial vessels, 1064 nm for deeper or darker skin tones.
Non-ablative fractional (Er:glass 1540–1550 nm, Thulium 1927 nm)	Texture, pores, fine lines, mottled pigment	Smoother texture, brighter tone	Minimal to moderate	1540–1550 nm excels at texture. 1927 nm is strong for pigment and actinic damage. Usually done in a series.
Hybrid fractional (example: 1470 + 2940 nm)	Combined texture and pigment in one session	Noticeable smoothing and brightening	Mild to moderate	Blends non-ablative and ablative columns for balanced results.
Ablative fractional (CO ₂ 10,600 nm, Er:YAG 2940 nm)	Deeper wrinkles, scars, heavy photodamage	More dramatic resurfacing	Moderate to significant	Greater results with more downtime. Er:YAG is often a bit gentler than CO ₂ .
Picosecond or Q-switched lasers (532, 755, 785, 1064 nm)	Discrete brown spots, tattoos	Spot-specific clearing	Minimal to mild	Precise for lentigines and tattoos. Use caution with melasma.
Mechanical microneedling (no heat)	Mild texture, early lines, delivery of topicals	Subtle smoothing	Minimal	A lower-energy option that pairs well with high-quality serums. Avoid RF microneedling for the reasons above.

Chemical peels	Pigment, texture, fine to deep lines	Smoother, more even skin	Varies by depth	Strong peels are next-level. Reserve for specific goals and expert hands. For a progressive, systematized approach, see Young Goose peels listed below.
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Young Goose professional peels, Performed by licensed professionals.

- **Longevity Enzyme Peel:** Enzyme-based, acid-free option that uses fruit enzymes with centella and marine longevity actives. Suits all skin types, including sensitive, dehydrated, mature, and photodamaged, and is used to help clear senescent cells, improve clarity, reduce redness, refine pores, and support a firmer look.
- **Copper Peptide Peel Phase 1:** A progressive glycolic acid combined with firming copper peptides (GHK-Cu). Designed for mild to moderate photoaging, acne, and uneven tone. Appropriate across Fitzpatrick types, but not for very sensitive or very dry skin, or active rosacea.
- **Copper Peptide Peel Phase 2:** A more intense glycolic acid concentration combined with copper peptides for advanced resurfacing in those who tolerated Phase 1. Primarily for Fitzpatrick I to III, with cautious extension to IV to V after a clean Phase 1 experience.

Why combine glycolic acid and GHK-Cu copper peptides? Glycolic acid clears out the dead skin on the surface so fresh, new skin is ready to go. That also means your skin can actually *use* the good stuff you put on it. That's when copper peptides come in; they signal your skin to make more collagen and elastin, repair damage faster, and fight off oxidative stress. Put them together and you're not just improving skin texture, you're hacking your skin's biology for deeper repair and long-term resilience.

Who needs more caution. Deeper skin tones, melasma-prone skin, keloid formers, anyone with active acne, eczema flares, or recent isotretinoin use should use extra care and stick with modalities and parameters that minimize heat and inflammation. Choose providers experienced with your specific Fitzpatrick type (skin tone).

How to prepare your skin for a laser series

Preparation improves outcomes and shortens recovery. Begin 4 to 8 weeks before treatment.

1. **Stabilize your routine.** Daily mineral SPF (like our Bio Shield SPF40), antioxidant serum in the morning, vitamin A at night, and robust barrier support. Youth Daily in the morning and Youth Reset at night are ideal anchors.
2. **Load the skin with resources.** Maintain adequate protein, vitamin C, zinc, omega-3s, and collagen peptides. Consider arnica or bromelain if your provider agrees.
3. **Time your actives.** Use vitamin A and C regularly up to the procedure, then pause irritating topicals 3 to 5 days before as your provider directs.
4. **Clear the field.** No active infections, cold sores, or open irritation. Ask about antiviral prophylaxis if you have a history of HSV.

Post-procedure recovery, the longevity way

Your goal is rapid, high-quality repair with minimal inflammation.

- **Barrier first.** Gentle cleanser, bland moisturizer, and occlusion if instructed. Keep the skin hydrated and protected from sun at all times. Adaptogenic Cleanser and Hyperbaric Mask would work great here
- **Reintroduce actives when re-epithelialized.** Once your provider clears you, restart NAD⁺ and peptide serums to support mitochondrial function and collagen organization. Resume vitamin C (Youh Reset) in the morning and vitamin A (Bio Retinol) at night as tolerated.
- **Photobiomodulation synergy.** Red and near-infrared light sessions can speed re-epithelialization and reduce post-procedure erythema. Pair your sessions with L.A.D.R. Serum, which is formulated to complement light therapy by supporting mitochondrial output and collagen synthesis during healing. This combination often shortens downtime and elevates results.
- **Systemic inputs matter.** Prioritize sleep, hydration, and protein for several weeks. Keep alcohol low and avoid unnecessary heat exposure while the skin calms.

A simple decision path

1. **Foundations locked in** for at least 8 to 12 weeks, including consistent Young Goose routine, nutrition, sleep, and supplementation.
2. **Define the primary target.** Tone and redness, or texture and pores, or deeper lines and scars.
3. **Match the tool to the target.** Start with non-ablative fractional for texture and tone or vascular work for redness. Progress to hybrid or ablative fractional only if needed.

4. **Plan a series.** Most non-ablative courses require 3 to 4 sessions, spaced 4 to 6 weeks apart, followed by maintenance once or twice per year.
5. **Protect your investment.** Keep your daily routine and lifestyle on point. This is how you bank results long term.

Final word

Advanced devices are next-level upgrades, not shortcuts. We avoid RF and HIFU because they tend to trade short-term tightness for fibrotic change, which runs counter to biological youth. When you choose modalities that favor organized remodeling, and when your skin is already well nourished and metabolically supported, you get smoother texture, clearer tone, and more durable results with less risk. That is the Young Goose way.

Biohack #7: Shield Your Skin – Intelligent Sun & Environment Protection

You wouldn't plant a beautiful garden and then let weeds take over, right? Likewise, after doing all this work to rejuvenate your skin, you need to **defend it from the known accelerators of aging**: ultraviolet radiation, pollution, blue light, and other environmental stressors. This isn't just about slapping on any old sunscreen, we'll do it in an innovative, optimized way:

- **Sunscreen, Upgraded:** The sun gives life (vitamin D, circadian rhythm, mood), but too much UV, especially UV-A, penetrates and causes DNA damage, collagen breakdown, and pigment issues. **Daily broad-spectrum sun protection is non-negotiable** if you want to maintain youthful skin. The trick is to use a *physical/mineral sunscreen with added skin benefits*. Chemical sunscreens can break down into irritating compounds and some can even generate free radicals when they absorb UV (ironic, right?). A better biohacker choice is a **mineral SPF like zinc oxide** that sits on the skin and reflects UV. Even better is if it's formulated with antioxidants and soothing agents. The **Bio-Shield SPF 40** by Young Goose is a prime example: it's a 100% mineral sunscreen that not only guards against UVA and UVB but also **protects from blue light, EMF, and pollution** while *improving* the look and feel of skin. It contains ingredients that hydrate and soothe, promoting barrier repair. So instead of a greasy or chalky SPF that you endure, you get a bioprotective lotion that actually makes your skin feel dewy and soft while wearing it. It's like an environmental shield plus skincare in one. Use it **every morning** as the final step in your routine. Yes, even if mostly indoors. Glass windows block UVB (burning rays) but not all UVA (aging rays), and our devices emit high-energy visible blue light which emerging research suggests can cause hyperpigmentation and free radical damage in skin. Bio-Shield covers all that. In true biohackers spirit; do more than one

thing at once- your sunscreen should also be a skin enhancer. This one is .

- **Antioxidant Layering:** UV and pollution generate free radicals that bombard your skin cells even with sunscreen on. Antioxidants neutralize those. For maximal protection, apply a form of **vitamin C** called **THDA** in the morning under your sunscreen. THDA Vitamin C not only directly quenches UV-induced radicals, it also regenerates Vitamin E and helps your sunscreen work better (studies show higher skin vitamin C = less UV damage even with same UV exposure). You can also find combo products – e.g., the YG YOUTH line contains longevity first molecules, but is also oaded with THDA vitamin C and GHK-Cu peptides, as well as an antipollution complex. It even defends against artificial blue light from screens. Think of antioxidants as an internal sunscreen. additionally, eating a plant-rich diet (berries, dark chocolate, leafy greens) gives your skin cells a circulating supply of antioxidants. Some biohackers even take **astaxanthin** supplements (mentioned earlier in the supplement section) this potent carotenoid (that gives salmon their pink/orange color) deposits in skin and has been shown to reduce UV damage and improve elasticity. It's like an edible sunscreen (still use topical SPF though!).
- **Blue Light Management:** We live in front of screens and under LED lights. Blue light (400-500nm) penetrates skin fairly deeply and research suggests it can cause hyperpigmentation and possibly interfere with the evening melatonin rise (if you get screen light at night on your face, not only does it keep you awake, it might be aging your skin by impairing overnight repair!). Solutions: use night mode or use the guid provided in this book to turn your screen red at night. Consider blue-blocking glasses especially in the evening. Use skincare that specifically mentions blue light defense – ingredients like **Ectoin, carotenoids, or certain peptides** can absorb or counteract blue light effects. Another biohack: **install ambient red/orange lighting at home for evenings** – not only will you sleep better, your skin will thank you for the break from high-energy light.
- **Pollution and EMFs:** Urban dwellers, listen up – pollution particles (PAHs, PM2.5) can land on skin and generate oxidative stress, even penetrating through hair follicles. They're linked to dark spots and collagen breakdown. Cleanse your face at night to wash off the day's pollution. Using cleansers with charcoal or clay occasionally can help absorb impurities (just don't over-dry your skin). We've formulated our Adaptogenic Cleanser with a special algae extract that helps with that as well. As for EMFs (non-visible electromagnetic fields from Wi-Fi, etc.), some biohackers are concerned about their cellular effects. While research is still ongoing on its effects on skin aging, we often suggest minimizing unnecessary EMF exposure. Simple steps: turn off Wi-Fi at night, don't sleep with your phone on your body, and maybe apply Bio shield SPF40 or use an EMF shielding device if you're very sensitive. At minimum, it can't hurt, and might reduce subtle stress on the body which indirectly benefits skin.

- **Smart Sun Exposure:** This might seem contradictory to sunscreen advice, but a biohacker knows that *appropriate* sun exposure is healthy. Early morning sun (UV index low) provides infrared and red light (which, as we know, is beneficial) and signals your circadian clock for a robust daily rhythm. We encourage getting sun on your skin and eyes (no sunglasses for 10-15 minutes) each morning. This sets you up for better sleep and likely better skin function. Then, later in the day, **avoid burning at all costs**. If you want a small dose of midday sun for vitamin D, expose stomach/arms/legs for just the amount of time that produces slight pink on the chest (for light skin, maybe 5-15 minutes, for dark skin a bit longer) then cover up or go inside. Use your SPF on face/neck/hands daily as they get incidental sun all the time, which accumulates aging. In summer or high UV environments, wear hats and UV-protective clothing. Remember, we're not anti-sun, we're pro-smart-sun. In fact, some sunlight is shown to boost NO (nitric oxide) release in skin which improves circulation and may help conditions like eczema or acne. So embrace sunshine in a biohacker way: intensively and consciously, not mindlessly.
- **Barrier Support:** The skin barrier (stratum corneum) is your frontline shield. If it's compromised, you'll lose moisture and let irritants in easily. Many anti-aging treatments can dry or thin the barrier (retinoids, AHAs, etc.). Always give back to your barrier with gentle **moisturizers rich in ceramides, cholesterol, and fatty acids** – the same lipids your skin naturally has. YOUTH Daily cream does this elegantly with a nourishing formula that not only hydrates but fuels regeneration with NAD⁺ and peptides. Also, **Bio-Barrier Serum** by YG is a gem for barrier repair: it's specifically designed to maintain optimal barrier function using biomimetic lipids. Great for anyone with dryness, irritation, or after procedures. When your barrier is strong, skin stays plump and resilient. Tip: run a humidifier at night if you live in a dry climate or have indoor heating – keeping ambient humidity around 40-50% prevents excess transepidermal water loss, so you wake up less “crepey.”

We've now assembled a comprehensive arsenal against skin aging. It's a lot of information – so let's distill it into an actionable protocol. Biohackers love data and plans, so here is **your high-impact skin protocol**:

Minimum Effective Dose (MED): The Foundational Skin Habits

(Do these consistently for major impact)

- **Daily NAD⁺ Topical & Cleanser:** Cleanse with an adaptogenic, pH-balanced cleanser (like the chamomile Adaptogenic Cleanser) to start your day by increasing NAD⁺ and not stripping skin. Use an NAD⁺-boosting moisturizer every morning (e.g., YOUTH Reset Serum with NAD⁺, precursors, spermidine, etc.) and at night (or alternate with a gentle retinol serum, like Bio Retinol at night). This one-two punch keeps your cell energy up 24/7. Follow with moisturizer of choice, or upgrade this routine with Youth Daily

moisturizer, containing NAD⁺ precursors, spermidine and copper peptides!

- **Optimize Sleep (7-9 hours in darkness):** No excuse, this is free and *hugely effective*. Track your sleep if needed and improve it (cool room, regular schedule, no screens late). [Good sleepers have measurably younger-looking skin](#) .
- **Intermittent Fasting 14+ Hours Overnight:** Finish dinner early, no late-night snacks. At least 3 days a week (if not daily), give your body a 14-16 hour fasting window. This triggers autophagy and hormone optimization, [helping skin clear waste and rejuvenate](#) . Remember to hydrate (water, herbal tea, black coffee).
- **Whole Food, Low-Toxin Diet:** Follow a low inflammatory diet focusing on leafy greens, high-quality proteins, healthy fats (omega-3s, MCT, olive, pastured butter), and polyphenol-rich foods. Avoid high sugar and processed carbs to prevent glycation. Include collagen in your diet (collagen protein or bone broth) to supply skin-building blocks. Studies confirm [improved elasticity and reduced wrinkles with daily collagen peptides](#) . Each meal, think: “How does this feed my skin?”
- **Daily Mineral Sunscreen SPF 30-50:** Apply a broad-spectrum mineral SPF every morning on face, neck, chest, and hands, areas that get the most sun. Use one with added antioxidants and moisturizers (like Bio-Shield SPF 40) so it doubles as skincare . Reapply if in direct sun more than 2 hours. This single habit *dramatically* slows photoaging and protects all the gains you’re making.
- **Basic Supplements:** Take a well-formulated multivitamin or targeted supplements to ensure you are replete in skin-critical nutrients. This includes:
 - Vitamin C: 500–1,000 mg/day to support collagen synthesis and antioxidant defense
 - Vitamin E: 100–200 IU/day (about 67–134 mg/day) natural mixed tocopherols to stabilize cell membranes and protect lipids from oxidation
 - Zinc: 30-50 mg/day for wound healing and collagen cross-linking
 - Selenium: ~100 mcg/day to boost glutathione peroxidase and protect against oxidative stress
 - High-quality fish oil: 1–4 g EPA/DHA daily for anti-inflammatory support

Layer in targeted compounds for deeper skin longevity benefits can be purchased separately or found in longevity supplement stacks like [HOP Box](#) :

- NAD⁺ precursor (NR or NMN) – 250–1000 mg/day to restore cellular energy and drive repair pathways
- Spermidine – 1–6 mg/day to promote autophagy and support cellular renewal
- Hyaluronic acid – 120–240 mg/day for deep dermal hydration and skin plumpness
- Collagen peptides – 10-20 g/day to provide the amino acid substrate for new collagen formation

- Glycine – 1–2 g at night (can be part of collagen peptides or separate) to enhance sleep quality and supply collagen-building amino acids

This combination covers both essential micronutrients and advanced longevity compounds, giving your skin the raw materials, cofactors, and cellular support it needs to stay youthful from the inside out.

- **Stress Reduction Ritual:** Pick at least one practice to do daily that lowers stress. It could be 10 minutes of meditation in the morning, a nature walk, journaling in the evening, or breathwork (the 4-7-8 breathing is great before bed to relax). Reducing cortisol will help preserve your collagen . It also just makes you happier and nothing is more attractive than a less-stressed you.
- **Hydration and Movement:** Drink plenty of water throughout the day. Dehydrated skin is dull skin. Eat hydrating foods (cucumber, watermelon, celery). And move your body, even a brisk walk at lunchtime gets blood flowing to the skin and flushes waste. Aim for at least 30 minutes of activity daily (mix of cardio and strength training for best metabolic health).

This Minimum stack alone, done consistently, will yield noticeable improvements in a few months: better glow, even tone, fewer new wrinkles forming, and a *healthier* feel to your skin.

Advanced Stack: Amplify and Accelerate

(For those ready to push the envelope further.)

- **Autophagy Booster:** Once a month, extend your fast to ~24 hours or do a weekly protein-fast day (lots of veggies, some fats, minimal protein) to deepen autophagy. Alternatively, try a **5:2 fasting** approach (2 days a week at 500 calories). On these days, you can also take a spermidine supplement (e.g., 1-2mg of spermidine content) and/or an extra dose of resveratrol (150mg) in the morning with some fat (for absorption) to synergize with fasting. [This is like a weekly “spring cleaning” for your cells](#) .
- **Red Light Therapy (3-5x/week):** Invest in a red/NIR LED panel. Use it for ~10 minutes per session, at 6-12 inches from your face (and/or other body parts you want to treat). Ideally do this in the morning or evening while listening to a podcast or relaxing. To maximize it, apply L.A.D.R. Serum or another light-activated serum to your face before the session . Over time, you'll see improved skin fullness and reduced fine lines as [collagen rebuilds , plus your cells get that mitochondrial boost](#) (which helps with overall skin function).
- **Targeted Topical Upgrades:** Add a high-quality **retinol serum** at night. For example, use Bio-Retinol Serum by Young Goose every other night to start . On nights you don't

use retinol, use an NAD+ replenishing serum (like Youth Reset serum). Also consider an exfoliating product once or twice a week: e.g., a mild AHA (like glycolic or lactic acid) or the YG's **NiaPolish** which uses fermented enzymes and micro-powder to gently dissolve dead skin . **Start slowly** – exfoliate 1x/week, see how your skin responds . This encourages cell turnover and keeps skin smooth, allowing your actives to penetrate better. The combo of retinol + occasional exfoliation + NAD+ is a proven approach for more even, radiant skin. Twice daily end you routine with a moisturizer that targets top-skin-layer repair. We of course recommend our Youth Daily moisturizer, which feed the skin's top layers with NAD+ precursors, Spermidine and peptides for an optimized barrier

- **Eye and Neck Focus:** By your 40s, a standard face routine may not be enough for the delicate eye and neck areas. Implement an eye cream twice daily (e.g., Eye C.A.R.E. with NAD+ boosters and peptides) and a neck & chest cream (like Youth Firming Neck & Chest) . These are formulated to address crepey texture and loss of elasticity in those specific zones. It's an often missed step, but an advanced biohacker covers all bases. You don't want a youthful face and an aged neck giving it away. A minute extra for these areas pays off with firmer, smoother skin where it's often neglected.
- **Internal Boosters:** In addition to the basic supplement stack provided earlier:
 - **Antioxidant & Photoprotection (*does not exist in a single product yet*)**
 - **Astaxanthin** (4–6 mg/day) for mitochondrial and UV-protective antioxidant defense.
 - **Red orange extract** (100 mg/day) to reduce pigmentation and oxidative stress.
 - **Lutein + Zeaxanthin** (10 mg lutein + 2 mg zeaxanthin/day) for blue-light and UV defense.
 - **Ergothioneine** (5–10 mg/day) to protect mitochondria and raise glutathione.
 - **N-Acetylcysteine (NAC)** (600 mg/day) to replenish glutathione, aiding detox and anti-pigment effects.
 - **CoQ10** (100 mg/day) and **PQQ** (10–20 mg/day) to support mitochondrial performance.
 - **Structural Support (*does not exist in a single product yet*)**
 - **Eggshell membrane collagen** (300–500 mg/day) for elasticity and firmness.
 - **Aloe sterols** (~19 µg/day) to double collagen production and boost hyaluronic acid.
 - **Mesoporousil® (bioavailable silicon)** (14 mg/day) for collagen enzyme activation.
 - **Vitamin D3** (2,000–5,000 IU/day) for barrier function and skin architecture.

- **Vitamin K2 (MK-7)** (100–200 µg/day) to prevent elastin calcification.
- **Senescence-Targeting** (*Can be found prepackaged in products like [Qualia senolytic](#)*)
 - **Quercetin** (500 mg/day) and **fisetin** (100 mg/day) for ongoing senomorphic benefits.
 - **High-dose fisetin pulse** (500–1,000 mg/day for 2–3 days once per month) (experimental, physician oversight recommended).
- **Hormetic Skin Challenges:** Engage in activities that mildly stress the skin for a positive adaptation. For example, **cold therapy**; finish showers with 30-60 seconds of cold water on your face and body. Cold can increase blood flow (when you warm back up) and may improve tone. **Sauna**; using an infrared or traditional sauna 1-4 times a week makes you sweat out toxins and has been linked to better skin hydration and clarity (not to mention whole-body anti-aging effects by heat shock proteins). Always hydrate well and replenish minerals after sweating. If you have access, **cold plunges and cryotherapy chambers** give a big endorphin and circulation rush. Some notice skin tightening as well (at least temporarily). These hormetic hacks are the cherry on top of an advanced routine.
- **Professional Treatments Series:** At this stage, consider doing a series of professional treatments to accelerate improvements:
 - **Microneedling with PRP:** Do a set of 3 sessions, one per month for 3 months. Remember to follow our guidance, optimize your internal environment leading up to each session (good sleep, high antioxidant intake, maybe extra collagen and zinc). You'll likely see significant improvement in fine lines, pore size, and overall texture at the end of the series.
 - **Chemical Peels (mild to medium strength):** Perhaps alternate with microneedling sessions – e.g. a light TCA or Jessner peel once in that 3-month span or after. Or try the **Young Goose Copper Peptide Peel series**, 4 to 6 treatments spaced 2-4 weeks apart. These peels use glycolic acid plus copper peptides to not only resurface but also boost healing. They are quite novel and perfectly in line with our approach of combining injury + bioactive for regeneration. With maintenance peels every few months, your skin is encouraged to keep remodeling itself to a youthful state.
 - **Laser/IPL:** If you have significant sun damage (lots of brown spots or redness), an IPL (intense pulsed light) can zap pigment and broken capillaries effectively. It's not really downtime-heavy but can even tone nicely (not recommended for darker skin tones). Fractional lasers can be considered if you want a big jump in skin quality, but weigh the downtime and cost. Often, doing the foundational work we've described will make a less aggressive laser (like a non-ablative fractional)

sufficient to get great results rather than needing an ablative laser. Always consult with a trusted dermatologist or plastic surgeon to pick the right treatment for your skin type and concerns.

- **Biohacker Aesthetic Gadgets:** If you're game, there are at-home devices that can complement pro treatments: LED panels, microcurrent devices (to stimulate facial muscles and perhaps improve lymphatic flow – e.g., NuFace), and even microneedling pens. A microcurrent device used a few times a week can give a subtle lifted, toned appearance by energizing facial muscle and skin.
- **Hormonal Optimization:** This goes beyond skin, but merits mention. In your 40s+ hormone levels shift; lower estrogen in women (post-menopause) causes noticeable skin thinning and dryness (estrogen stimulates collagen and hyaluronic acid production). Men's testosterone drops which can indirectly affect skin via reduced oil production and slower repair. Some choose bioidentical hormone replacement (BHRT) under medical guidance to restore more youthful hormone levels. The primary goal is overall health, but anecdotally many see improved skin thickness, moisture, and healing when hormones are balanced. Estrogen, for example, when replaced appropriately in post-menopausal women, has been shown to improve skin collagen content and elasticity. **Do this only with a doctor's supervision** (balancing hormones is complex and individualized).

The advanced stack is all about synergy – stacking multiple modest improvements into a big leap. You might not do every item above; choose what fits your lifestyle and budget. But even a handful of these – say, red light + retinol + topical NAD+ + monthly microneedling – on top of the basics will noticeably turn back the clock on your skin.

Radical Upgrade: Elite Biohacks for the Skin Jedi

(For those who want maximum impact and are willing to push the boundaries.)

- **Hyperbaric Oxygen Therapy (HBOT):** If you have access to a hyperbaric chamber (some clinics offer packages, or you might invest in a mild home unit), consider doing a protocol of HBOT sessions (e.g., 60-90 minutes at 1.5-2 ATA, pure oxygen, 5 days a week for 4-6 weeks). This is what [an Israeli study](#) did that **increased telomere length by 20% and reduced senescent immune cells by up to 37%**. It also significantly improved skin collagen and elasticity in [their follow-up skin trial](#). People often emerge from a month of HBOT looking like they've been on a spa retreat; skin is glowing and fine lines reduced (likely from the surge in collagen and blood vessel formation). It's expensive and time-intensive, but it's arguably one of the closest things to an age-reversal therapy we have data on. If doing it, treat it as a whole-body rejuvenation: eat a clean diet rich in polyphenols during the protocol (to handle oxidative stress from high O₂), and make sure to use **Young Goose's Hyperbaric Mask** during sessions

because and the following nights for ultimate results.

- **Exosome or Stem Cell Facials:** The bleeding edge of regenerative aesthetics is using harvested exosomes (tiny vesicles from stem cells loaded with growth factors) or even stem cell infusions into the skin. Some high-end clinics offer exosome microneedling. Applying lab-grown stem cell exosomes during a microneedling treatment. These exosomes contain a concentrated dose of youth signals that can dramatically speed healing and boost dermal rejuvenation. Users have reported faster recovery and a *remarkable* glow and plumpness after such treatments. It's costly and still new (ensure the source is reputable to avoid any risk of reaction). But this is essentially giving your skin the communication of young cells directly. It's like PRP on steroids (since PRP comes from *your* older blood, whereas exosomes can come from lab-grown neonatal stem cell cultures). Stem cell therapy systemically is also radical – some folks travel to get stem cell IVs or injections, which often have skin benefits like improved hair, tighter skin, etc., though that's anecdotal. This is the very frontier, so if you go there, work with top-notch professionals.
- **Prescription Skin Rejuvenators:** There are a few prescription medications with intriguing skin anti-aging profiles. One is **Rapamycin (Sirolimus)**. Commonly used as an immunosuppressant, but in low doses it's being trialed as a systemic anti-aging drug (it inhibits mTOR, promoting autophagy). Topically, rapamycin cream has shown promise in reducing aging signs like wrinkles and even treating conditions like angiofibromas in tuberous sclerosis. Some biohackers obtain rapamycin cream from compounding pharmacies and apply a tiny amount a few times a week to the face. Early case reports suggest it can improve skin elasticity and even out pigmentation, likely by reducing senescent cell accumulation (rapamycin can prevent cells from becoming senescent) . It's worth noting that by using spermidine rich skincare and adding in YG's ProC.A.R.E. serum for a month every six months provides a robust senescent clearing alternative
- **Regular “Reset” Retreats:** Consider, once a year, doing a dedicated 1-2 week longevity retreat for yourself. For example, a week where you do a 5-day fasting-mimicking diet, daily infrared sauna, meditation, extra sleep, maybe an NAD⁺ IV or two (some longevity clinics offer IV infusions of NAD⁺, it's an intense but potent boost for cells), and finish that week with a series of skin treatments (like back-to-back microneedling + peel). Think of it as an *aging reset*. This is radical because it's a lot to do, but a focused protocol like this could turn back the biological clock a bit each year. Some biohackers schedule an annual “biohacking vacation”; they'll visit something like the [Biohack Lab](#) or a medical spa that offers hyperbaric, cryo, IVs, etc., and immerse in therapies. When you come back, not only will your skin look great, but your whole body will be rejuvenated. It's an investment, but if turning 50 and looking 35 is a goal, these are the lengths one might go.
- **Cutting-edge Monitoring:** Finally, radical biohackers measure progress. You might use a high-resolution skin camera or app to track your wrinkle depth and brown spot count

over time. Or get your skin's biological markers measured (we are getting ready to launch a metabolomic test, available through providers, ourselves). Dave Asprey often says "track it to hack it." This level of tracking is radical for skin, but it could validate that all these efforts are truly reversing skin aging markers, not just in appearance but at the DNA level. Imagine getting results that show your skin's epigenetic age is 10 years younger than your chronological age. That's the kind of data that motivates you to keep at it. Some universities or companies might offer skin biopsies for research, but a less invasive way could be those AI skin analysis apps that give an age estimate. Use them as fun feedback, not gospel. Stay tuned, as we are working to bring this feature to younggoose.com

By implementing these radical upgrades, you're essentially performing "**Time Travel**" on your **skin** – pulling it back to a younger state in multiple dimensions. This is as hardcore as it gets short of future tech like gene editing or stem cell regeneration on a large scale (which, who knows, may come in the next decades!). But even now, we have an extraordinary toolkit at our disposal.

Throughout this journey, remember the core biohacking ethos: test, refine, and find what works for *you*. Everyone's skin responds a bit differently. But the protocols above are built on solid science and ancestral wisdom, supercharged with modern tech. You've transformed your approach from a hit-or-miss "hope in a jar" mentality to a **data-driven biohacking strategy**. You're treating your skin as a complete system within your body's ecosystem – and that's why you'll see results that make others ask, "*What's your secret?!*"

Your secret: a combination of disciplined fundamentals and daring innovations, all grounded in the Young Goose-style pursuit of optimal skin performance. You're not just looking *younger* – your skin is *functioning* younger at the cellular level.

Before we conclude, let's quickly recap the **key daily routine** you might follow now:

- **Morning:**
 - Adaptogenic Cleanser (gentle wash fueling NAD⁺) .
 - Mist Bio-C Peptide Spray or Blue Peptide Spray (Methylene Blue + GHK-Cu + NAD⁺ Apex) **Coming Soon** .
 - Apply YOUTH Reset Serum (NAD⁺, etc.) – let absorb.
 - Every six months, follow up with ProC.A.R.E.- use twice daily until bottle runs out

- Dab Eye C.A.R.E. serum around eyes .
- Moisturize with YOUTH Daily cream (NAD⁺, copper peptide, spermidine) .
- Slather Bio-Shield SPF 40 to finish (don't forget neck and backs of hands) .
- Take supplements with your Bulletproof Coffee (collagen protein, etc.).
- Smile in the mirror – you're armed for the day.

- **Evening:**

- Double cleanse if you wore makeup or heavy sunscreen (oil-based cleanser then Adaptogenic Cleanser cleanser).
- Apply Bio-Retinol serum .
- On retinol off-nights, apply YOUTH Reset Serum or maybe apply L.A.D.R. Serum and do a 10-min red light session before bed.
 - Every six months, follow up with ProC.A.R.E.- use twice daily until bottle runs out
- Layer a YOUTH Daily moisturizer on top.
- Use Eye C.A.R.E. again and YOUTH Firming Neck & Chest cream.
- Finish up by applying the famous Young Goose Hyperbaric Mask to supercharge nighttime cellular renewal
- Ensure your room is dark, phone is on airplane mode, and maybe run a humidifier.
- Do a 5-minute gratitude reflection to lower stress – perhaps grateful for how far your skin has come!
- Consider learning face taping and add that to the end of your nightly routine

- **Weekly extras:**

- One night do Niapolish exfoliation mask , followed by the Hyperbaric Mask for an at-home spa ritual .

- Red light therapy ~3x/week (could be mornings on weekends, etc.).
- Microcurrent device or facial massage 2-3x/week while watching a show, to keep facial contours toned.
- Sauna on Saturday, Cold plunge on Sunday, or vice versa, to shock the system (in a good way).
- Fasting day mid-week with extra herbal tea and maybe some bone broth for dinner.

Following this kind of regime, you'll not only see visual changes, but you'll *feel* that your skin is stronger, more resilient, and practically high-performing. It'll handle the occasional sun exposure or late night better and bounce back faster, just like younger skin does. Your "biological skin age" will be regressing.

The Unfair Advantage: Conclusion

You have now in your hands (and on your face) a **comprehensive, biohacker-centric protocol** that approaches skin rejuvenation from every angle; internal vitality, cellular housekeeping, cutting-edge topicals, and strategic tech interventions. This is **skin optimization 2.0**, modeled after the biohacker's way of life: science-backed, holistic, and results-driven. We prioritized high-leverage actions (sleep over pricey creams, NAD⁺ over trendy fads) to ensure your time and resources give you maximum return.

The synergy of these methods is your *unfair advantage*. Most people rely on a single "miracle cream" or an occasional clinic treatment and wonder why aging marches on. You know better. You've hacked the system from the inside out. You're enhancing your skin's **energy (mitochondria)**, **repair capacity (sirtuins, NAD⁺, autophagy)**, and **structural components (collagen, elastin via peptides and renewal signals)**, all while **shielding it from harm**. The mainstream isn't telling people that wrinkles form decades before they appear, at the cellular level, but you've intervened at that root level, effectively turning back that invisible clock.

Imagine yourself 6 months and then 12 months into this protocol. The mirror shows a fresher version of you. Fine lines have faded or filled in, deeper creases are smoother, pigmentation is more even. That slow droop at the jawline is firmer, and maybe even markedly lifted if you did those microneedling and copper peptide peel treatments. Your friends say you look "rested" or that you have a certain *glow*. They might assume you found a fantastic facialist or had "work done," but the truth is you *worked* with your biology. And importantly, your skin isn't just *looking* better, it's biologically healthier! wounds heal faster, you rarely get breakouts, and it's less reactive. In short, **you've upgraded your skin's performance**.

Keep in mind, biohacking is a journey of continuous improvement. Pay attention to new research. The field of longevity is exploding. There may be even more powerful senolytics or gene therapies on the horizon for skin. We'll make sure to make them available in our products, and you'll be poised to integrate them, because you've built such a strong foundation. Perhaps in the future, we'll be discussing CRISPR tweaks to boost skin collagen or personal biome grafts to maintain youthful microbiome signals. But that's another book! For now, you're already among the elite group proactively managing your aging process.

Remember that skin is also a reflection of the soul. Your mindset matters. Approach this journey with **positivity and patience**. Stressing over every line is counterproductive (cortisol wrinkles the skin, we learned that!). Instead, view this as *self-care and empowerment*. You're not fighting age out of fear; you're optimizing your health and appearance out of love for life and confidence in yourself. We believe gratitude and stress reduction should be a part of any anti-aging regimen, so enjoy the process. The routines can be almost meditative: the morning serum application, the evening red light session, these are moments you invest in *you*. Savor them.

Finally, to address the skeptics that might say "Isn't all this overkill? Can't I just use a moisturizer and accept aging?" Sure, you *could*. But you're a biohacker, you thrive on pushing limits and unlocking potential. Just as we optimize brain function or physical performance, why not optimize our skin, the body's largest organ? There's no vanity in wanting your external state to reflect your internal youthfulness. In fact, healthy, radiant skin is a sign of a healthy body and balanced life. We're not doing shallow quick fixes; we're literally turning back biological aging markers in the skin. That's *wellness*, not vanity. And because skin health is intertwined with body health (nutrients, sleep, etc.), by following this protocol you'll likely see side benefits like increased energy, better metabolic markers, and improved confidence. It all connects.

Congratulations on making it through this intensive guide. You now have the knowledge and tools to become, essentially, your own skin scientist and strategist. You're joining the ranks of those who won't settle for "getting old" the way previous generations did. You have the power to dramatically slow, and in many aspects, reverse, the skin aging process.

And when people marvel at your youthful appearance and ask what you're doing, you might smile and share a tip or two... or you might simply say, "*I upgraded my skincare to a whole new level.*" They may not understand, but you do – you've implemented **The Protocols** in true Young Goose fashion; boldly, intelligently, and effectively.

Your skin is Bulletproof, your glow is unstoppable, and the best is yet to come. Here's to hacking your way to ageless skin and unlocking the unfair advantage that will keep everyone guessing your age, in disbelief, for years to come!

With love and gratitude,

Anastasia Khodzhaeva, Amitay Eshel,
And the Young Goose / Biohacking Beauty Podcast Team