Rewriting the Skin's Future: Regeneration, Longevity, and the Next Era of Aesthetics

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Disclosures

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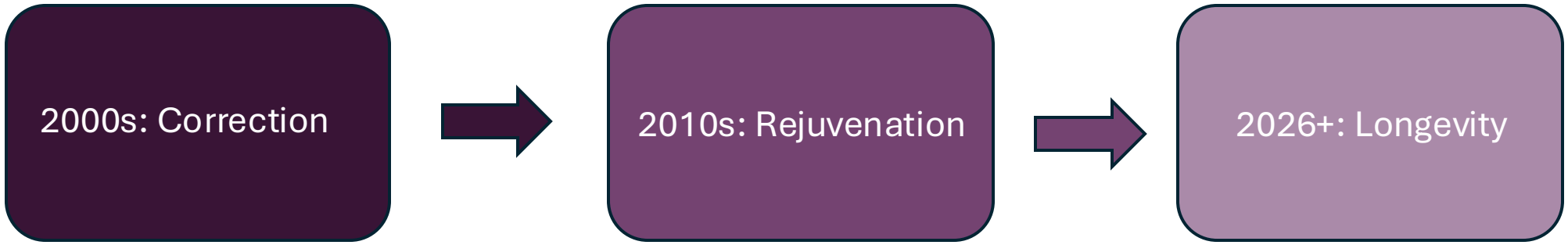
- Rapalogix Health
- L'Oreal
- Allergan Aesthetics
- Galderma
- Revance
- Rapalogix Health
- Lumenis
- Fotona
- Nutrafol

The Evolution of Aesthetic Medicine

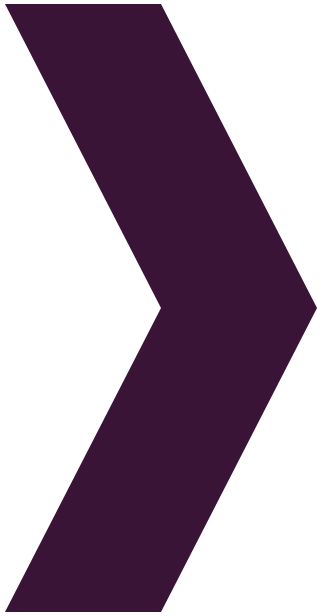


Why Do We Age?

Menopausal Skin

Scientific Mechanisms

- Collagen drops rapidly: ~30% in first 5 years post-menopause, then ~2%/year
- Dermal biomechanics decline as estrogen-regulated ECM genes downshift
- Stratum corneum ceramides decrease and shorten → TEWL↑ and dryness
- Skin surface pH rises → protease activity↑, barrier recovery slows, sensitivity/rosacea flares
- Sebum declines overall; some retain hormonal acne
- Repair slows; fragility/bruising increase

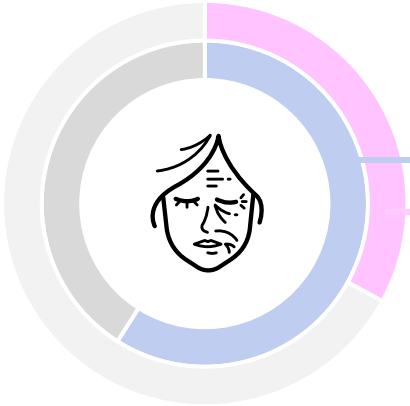


Regimen Translation

- Barrier lipids + humectants daily
- Retinoid ladder for collagen signal, slower titration
- Visible-light-blocking SPF for dyschromia and relapse prevention
- Gentle acids (PHAs/low AHA) 1–2×/week to avoid barrier injury
- Pigment anchors: thiamidol, TXA, azelaic + supportive botanicals
- Consider phytoestrogenic bioactives where appropriate

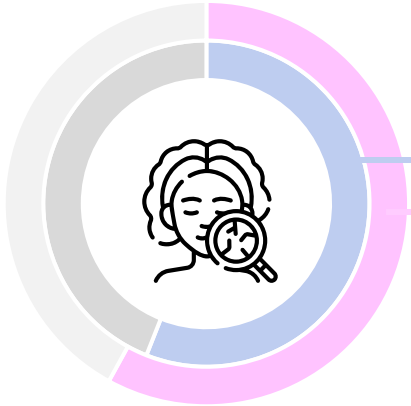
A variety of skin changes are observed, across face & body

Women surveyed experienced on average 3 skin changes to the face & body since the start of menopause



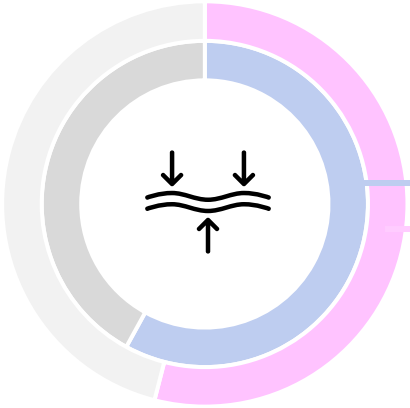
Lines & wrinkles

59% on the face
33% on the body



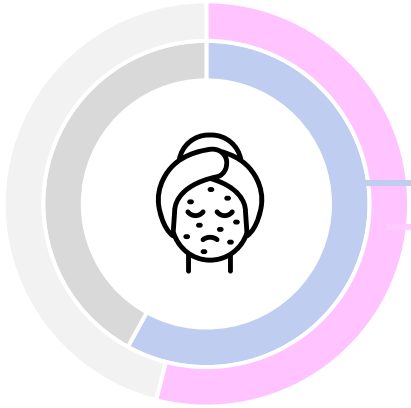
Increased dryness

56% on the face
58% on the body



Loss of firmness and elasticity

58% on the face
54% on the body



A duller skin tone

40% on the face
30% on the body

The **overall impact of skin changes** on the face and body was rated

6/10

in severity

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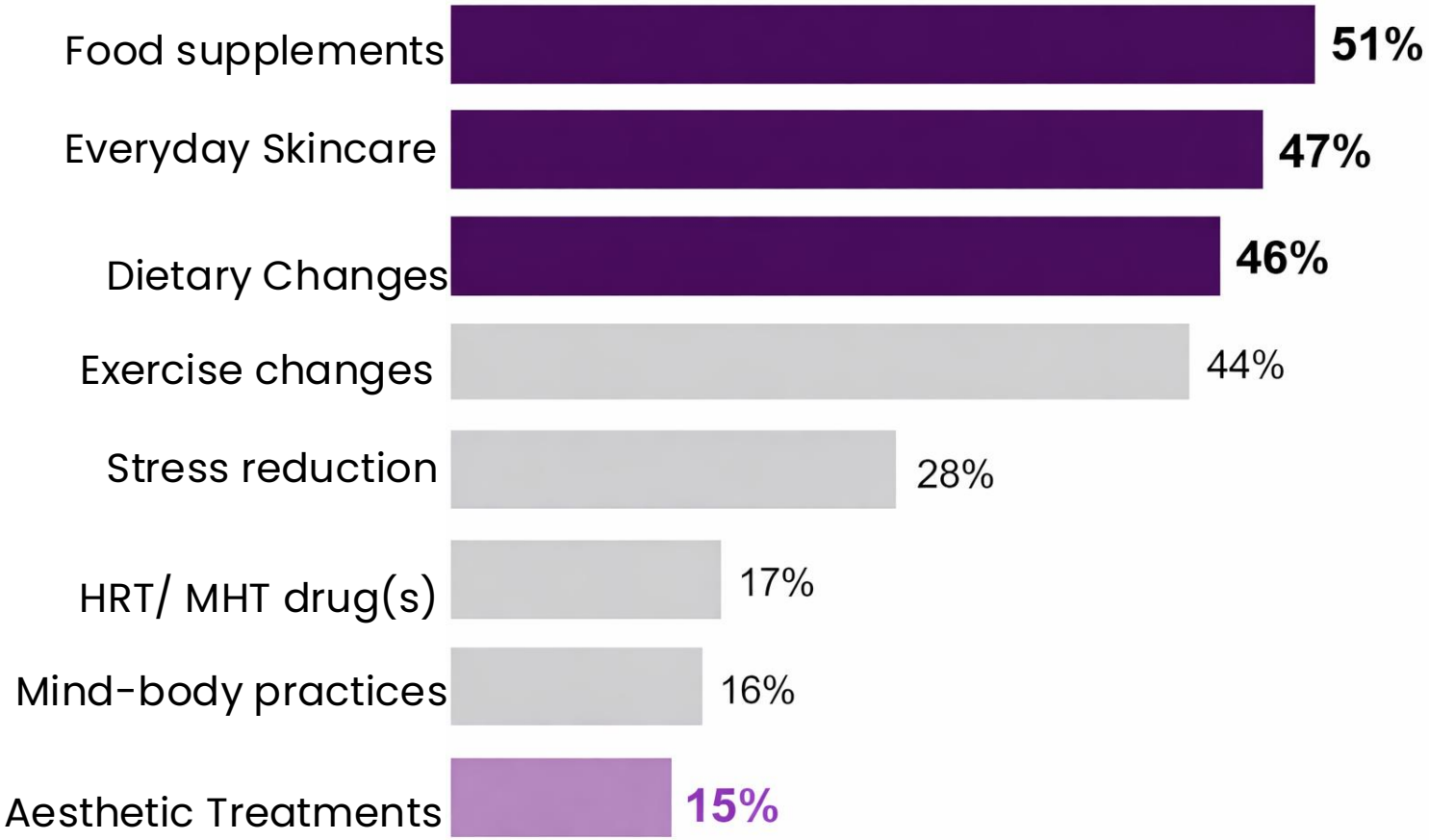
What women try first to alleviate the negative impact of menopause....

Treatments or actions to help reduce the effects of menopause

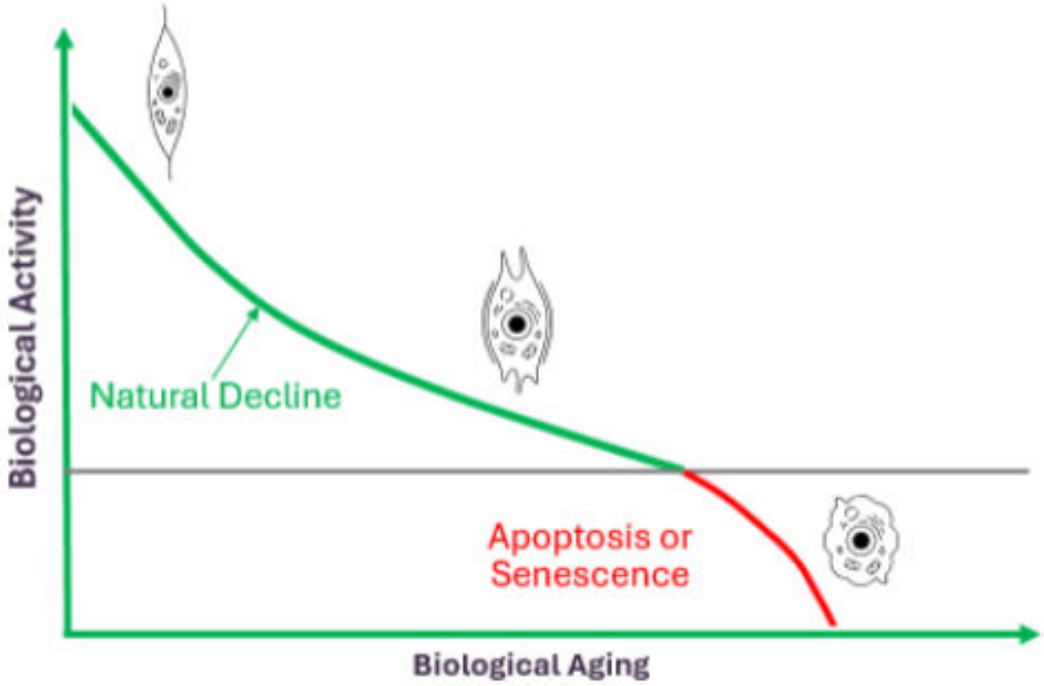


Most women start with OTC, Skincare and lifestyle changes. **A stepwise plan builds trust and adherence.**

Skin Longevity

A reflection of sustained cellular health

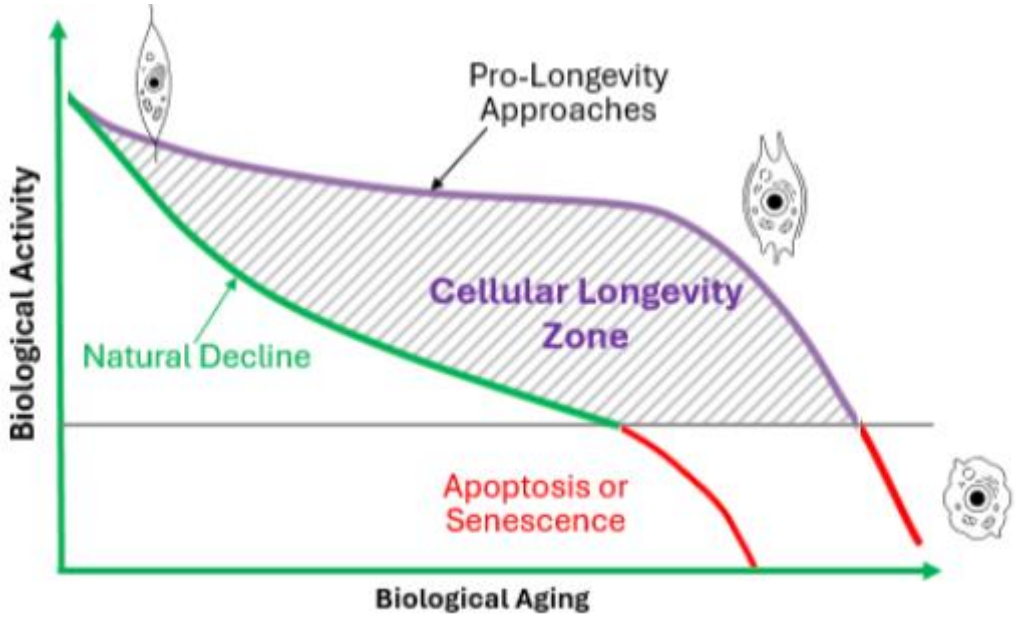
- **Longevity:** Preservation of biological function, regenerative capacity, and adaptability over time



Skin Longevity

A reflection of sustained cellular health

- **Longevity:** Preservation of biological function, regenerative capacity, and adaptability over time
- Extending the functional lifespan of skin cells



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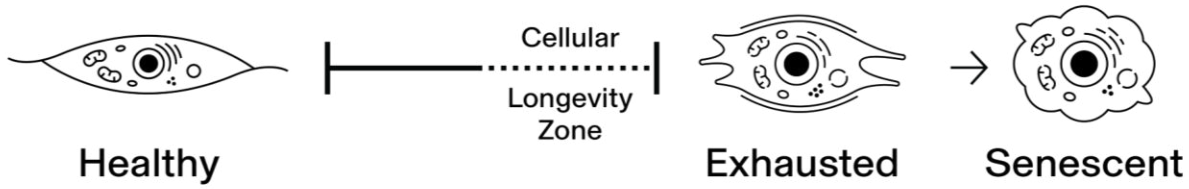
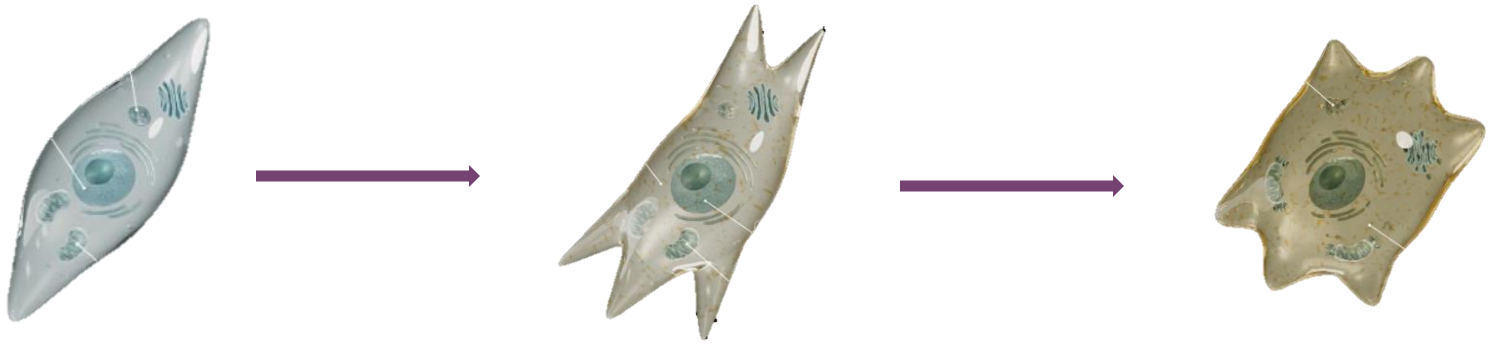


Focus on the dermal fibroblast:

- Metabolically active
- Responsive to signaling cues (GFs, cytokines)
- Extracellular matrix (ECM) production
- Capacity for regeneration & healing

Skin Aging:

The Accumulation of Exhausted and Toxic Dermal Fibroblasts



Healthy Fibroblast
EFFICIENT

Exhausted Fibroblast
INEFFICIENT

Senescent Fibroblast
TOXIC

Skin Longevity

A reflection of sustained cellular health

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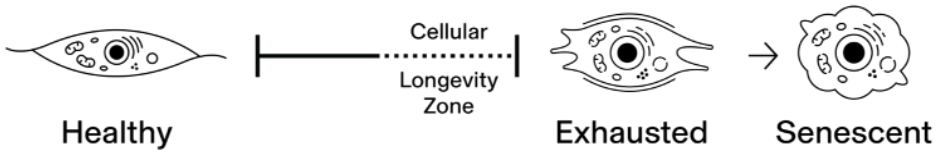
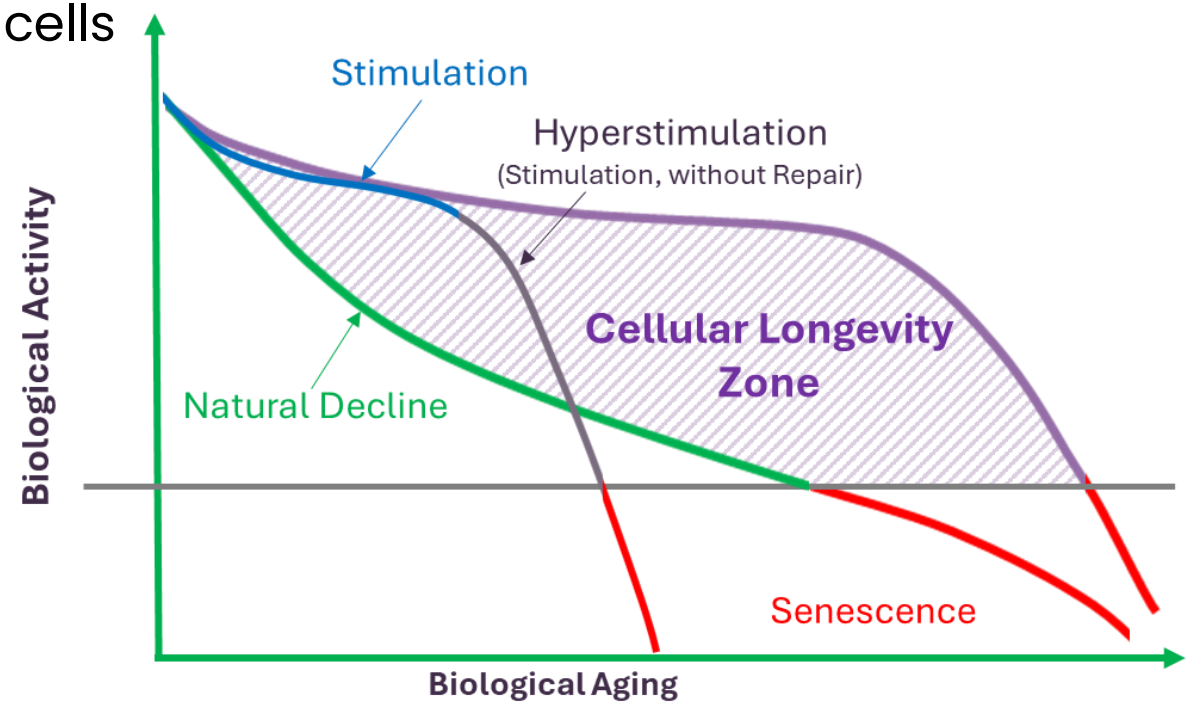


- Hyperstimulation pushes fibroblasts beyond their regenerative capacity and can accelerate aging



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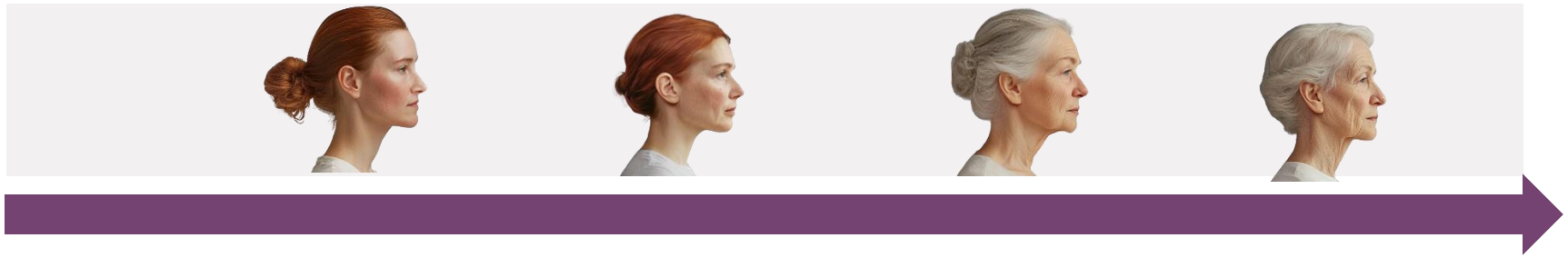
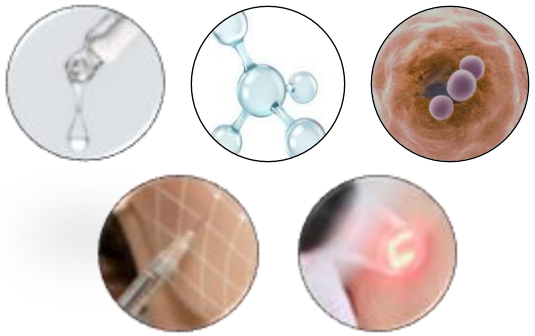


Healthy Fibroblast
EFFICIENT

Exhausted Fibroblast
INEFFICIENT

Current Treatments



"Anti-Aging" Approach

- Targets **signs,** not the aging process
- **Temporary** results
- **Declining** efficacy

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Pro-Longevity Mindset Shift

Reset cells to a healthy state, extend cellular longevity over a lifespan

Healthy Fibroblast
EFFICIENT

Exhausted
Fibroblast
INEFFICIENT

Research has identified a few highly conserved *Master Regulators of Aging*

mTOR

mTOR is a highly conserved master regulator of cellular metabolism, growth and longevity. It is a hub that integrates signals from nutrients, growth factors, and environmental stress to control cellular processes

mTOR is known to play a role in ALL hallmarks of aging

AMPK

AMPK is a conserved master regulator of metabolism, which is activated in response to energy stress. AMPK restores energy balance by inhibiting anabolic processes and promoting catabolic processes that generate ATP

AMPK plays a role in many hallmarks of aging, including:

- Deregulated nutrient sensing
- Disabled macroautophagy
- DNA damage & Telomere attrition
- Stem cell exhaustion
- Mitochondrial disfunction
- Cellular senescence

SIRTUINS

Sirtuins are a family of highly conserved enzymes that control a variety of cellular functions via gene expression regulation in response to diet and stress.

SIRTUINS play a role in many hallmarks of aging, including:

- Epigenetic alteration
- Deregulated nutrient sensing
- Mitochondrial dysfunction
- Telomere attrition
- Genomic instability
- Chronic inflammation

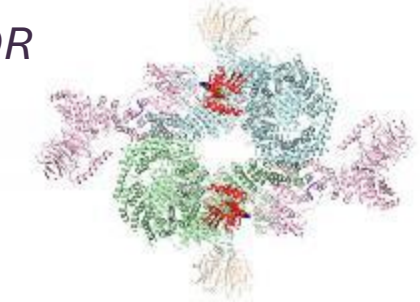
Lopez-Otin et al 2023; Lopez-Otin et al 2013; Tenchov et al 2024

mTORC1 Inhibition

Pan-Hallmarks Approach to Longevity

mTOR is a master regulator of cell function, balancing growth and repair

mTOR



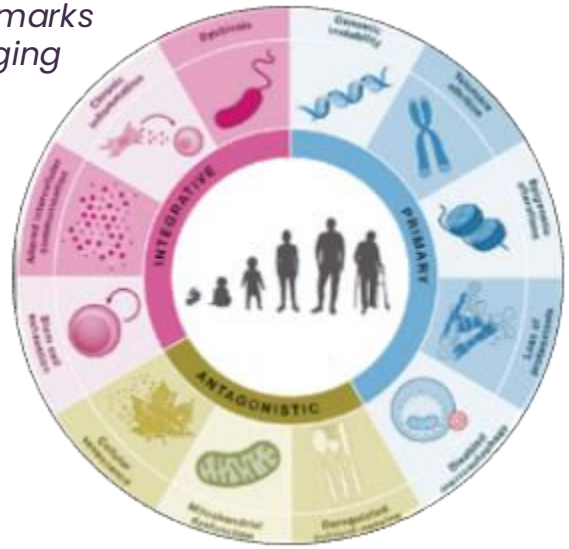
mTOR is evolutionarily conserved across all species

Activates growth pathways

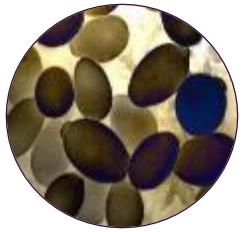
Activates of repair pathways

mTOR is a "Pan-Hallmarks" Regulator of Aging

12 Hallmarks of Aging



mTOR inhibition increases lifespan in all species tested



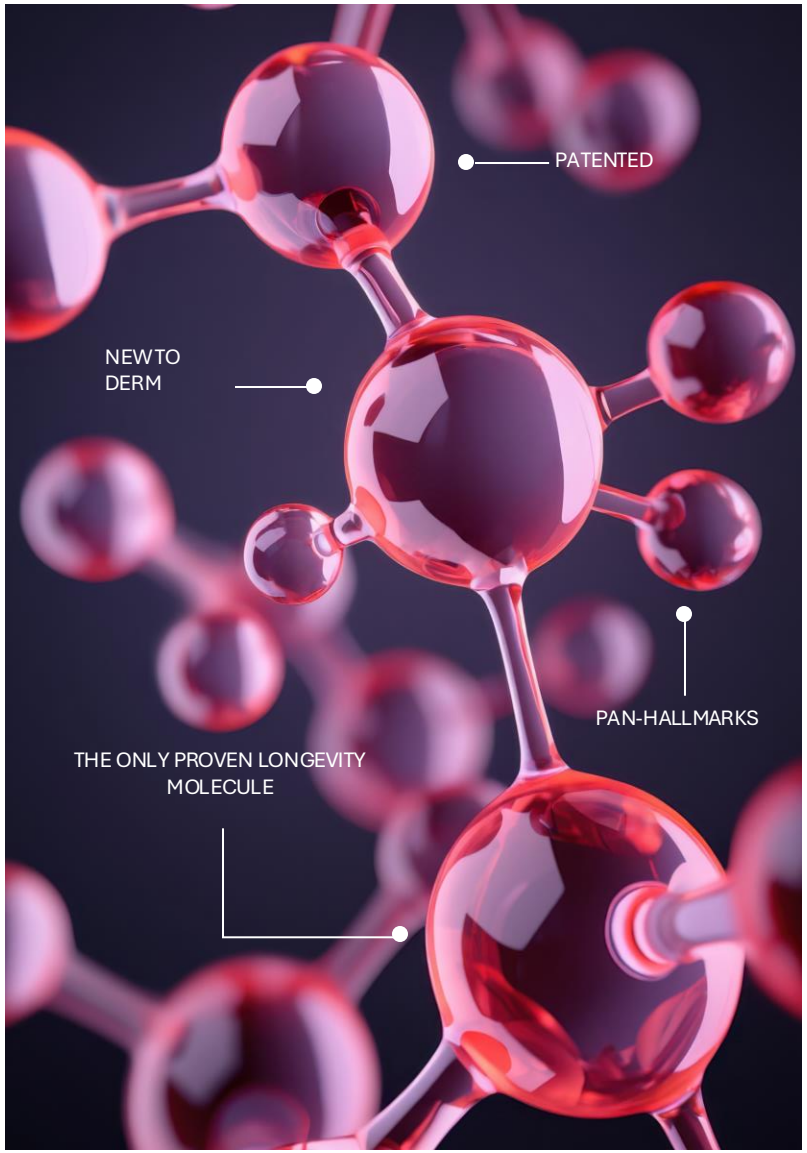
Yeast (+54%)

Worms (+19%)

Flies (+26%)

Mice (+18%)

References: Papadopoli et al 2019; Lopez-Otin 2023 ; Dumas and Lamming 2019; Saxton and Sabatini 2017; Mannick and Lamming 2023; Powers et al 2006; Robida-Stubbs et al 2012; Sun et al 2012; Bjedov et al 2010; Harrison et al 2009; Miller et al 2011; Lamming et al 2013



RLX-201

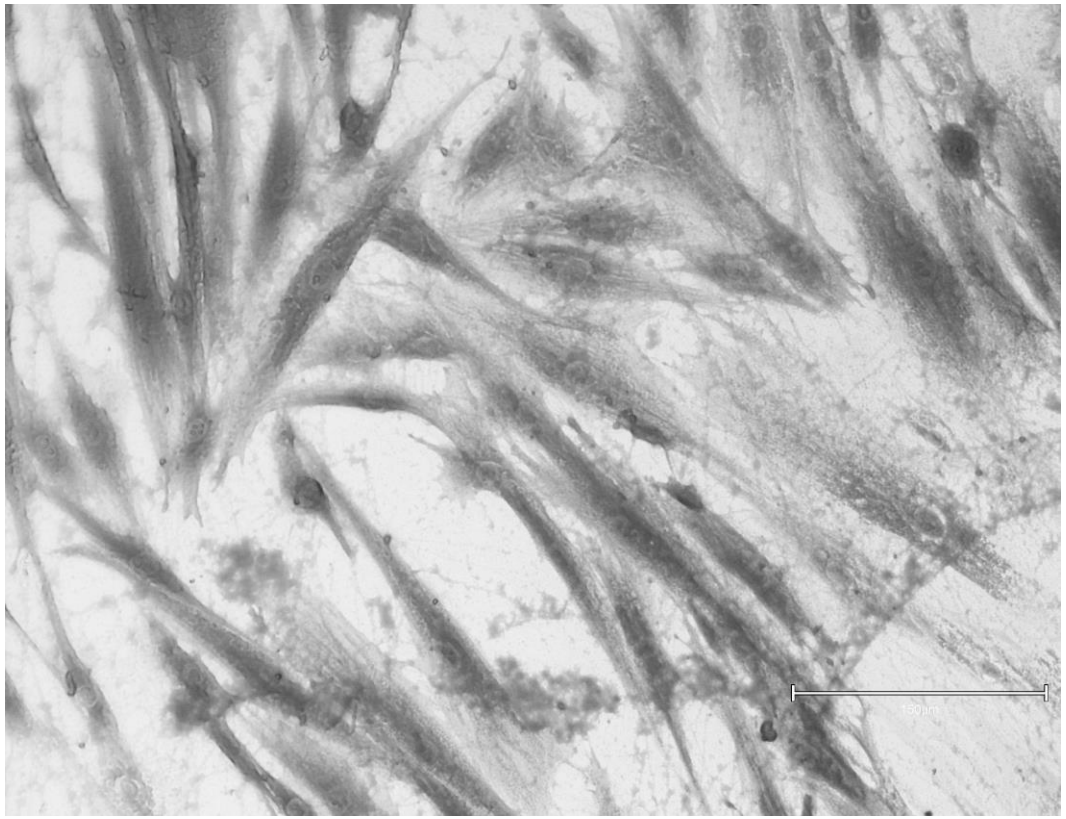
Patented Longevity Molecule

- Rapamycin-based analog, selectively inhibits mTORC1 and preserves mTORC2
- Optimized for topical penetration and skin permeation
- Excellent safety profile
- Soluble and stable in common skincare excipients
- INCI registered as a cosmetic ingredient

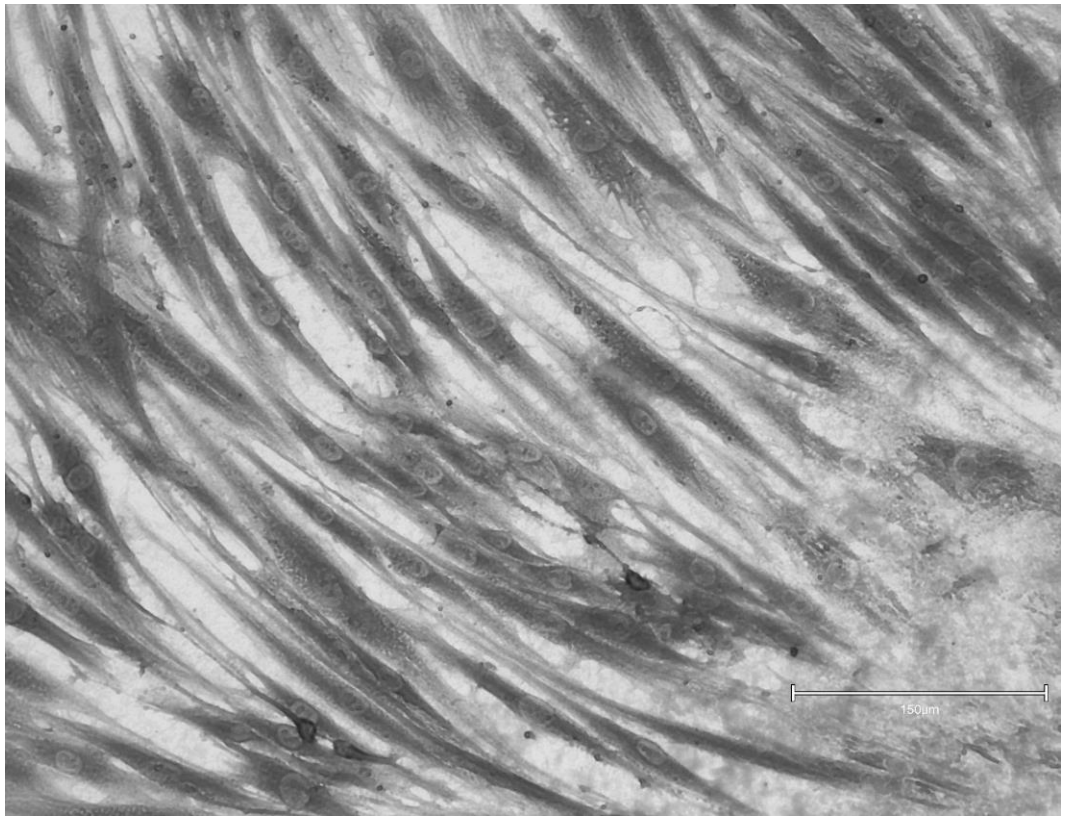
RLX-201: Rejuvenation of Fibroblasts

RLX-201 treatment results in healthier, more active fibroblast phenotype, restoring morphology and function

Control Fibroblasts



RLX-201-Treated Fibroblasts



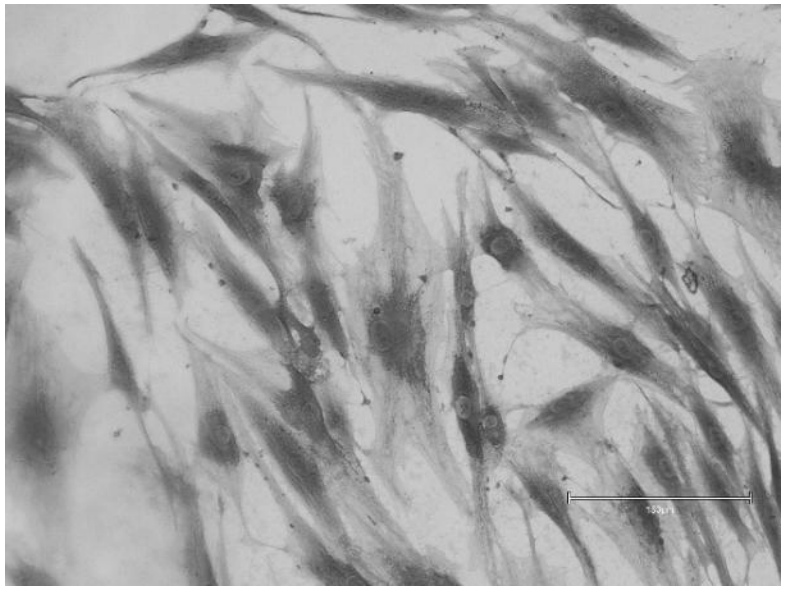
Study performed in adult human dermal fibroblasts. Cells were pre-treated with RLX-201 or water (control) for 72 hrs, followed by water for 24 hrs.

RLX-201 + Anti-Aging Active

Cellular Repair Resets Exhausted Cells

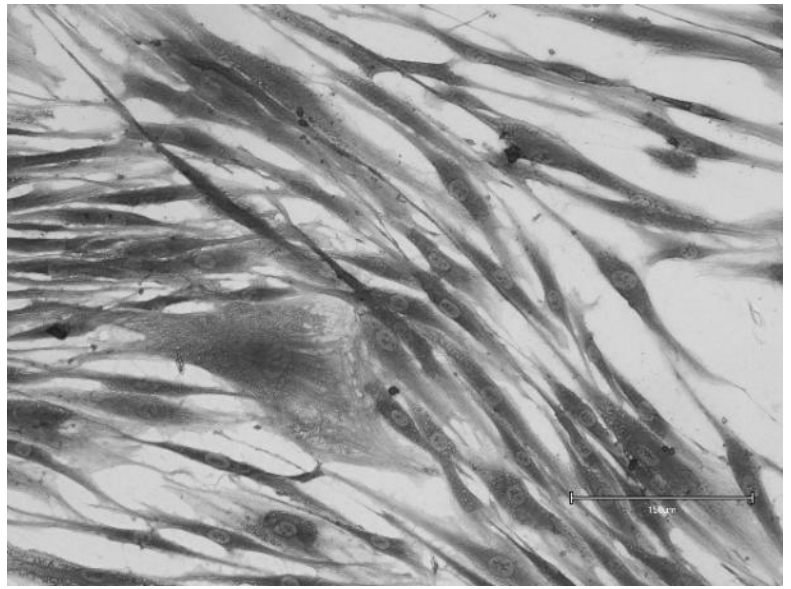
56 Year Old Donor Skin:

No Treatment



AA Active Only (Control)

RLX-201 Pre-Treatment + AA Active



Study performed in adult human dermal fibroblasts. Cells were pre-treated with RLX-201 or water (control) for 72 hrs, followed by fibroblast-stimulating active for 24 hrs.

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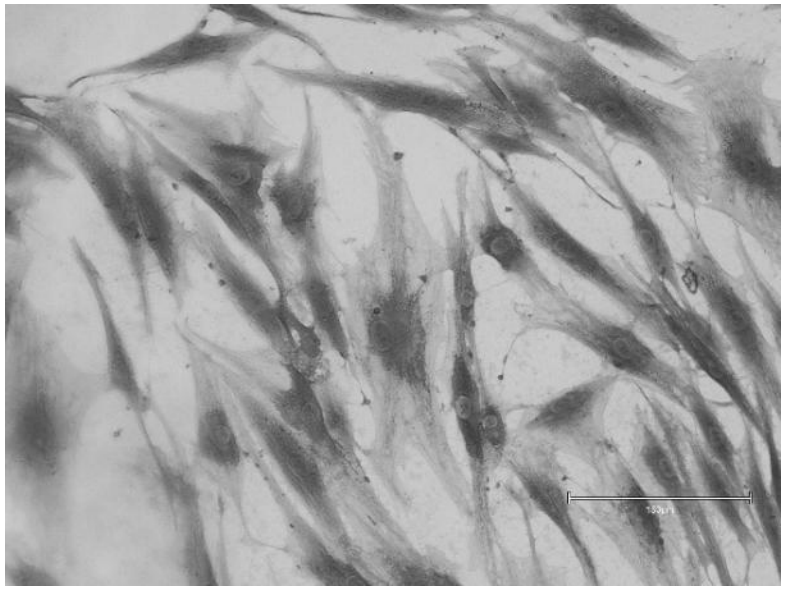
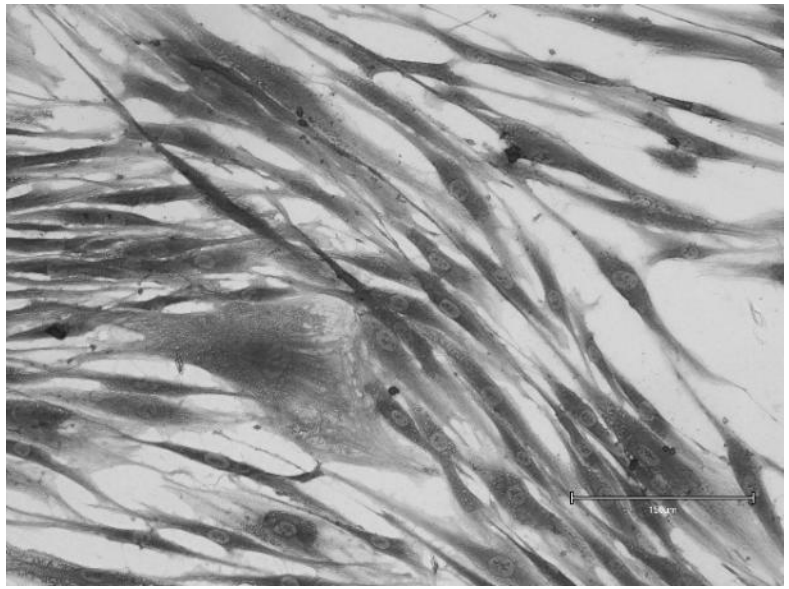
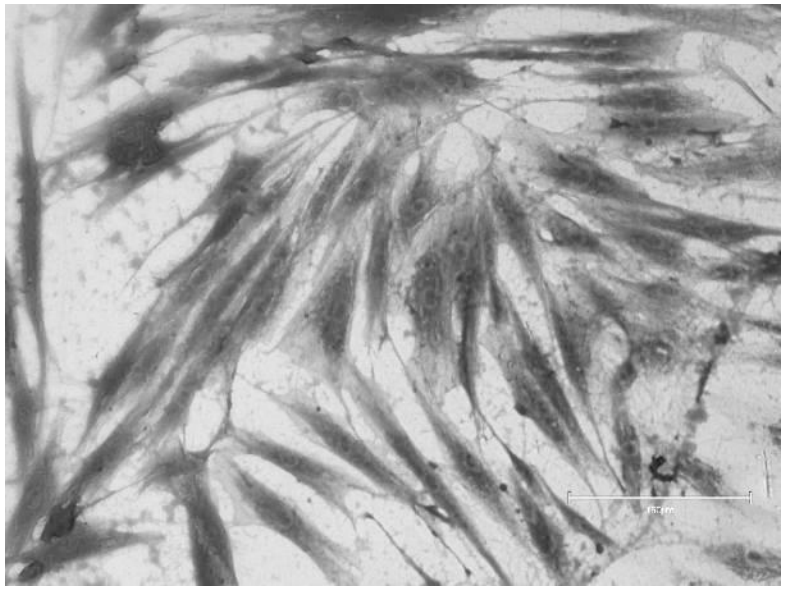


RLX-201 Pre-Treatment + AA Active



23 Year Old Donor Skin:

No Treatment



Study performed in adult human dermal fibroblasts. Cells were pre-treated with RLX-201 or water (control) for 72 hrs, followed by fibroblast-stimulating active for 24 hrs.

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Building a Regimen

Morning Regimen Template

- Gentle cleanse
- Cellular repair mTORC1 inhibitor
- Targeted AM Correction
- Moisturizer or Barrier Repair Serum, as needed
- Broad-spectrum SPF (tinted if pigment-prone)

Evening Regimen Template

- Cleanse / double cleanse if needed
- Cellular repair mTORC1 inhibitor
- Retinoid most nights
- Moisturizer over/sandwich for tolerance
- Off-nights: acids or pigment adjuncts

Correction Adjuncts by Phenotype

Dry/Sensitive

- Barrier-first
- PHAs
- Gentle Retinoid Ladder

Oily/acne-prone

- BHA + retinoid backbone

Pigment-prone

- Tinted SPF
- Vitamin C
- TXA + azelaic acid

Menopausal/mature

- Richer Lipids
- Assertive retinoid, if tolerated

Designing for Decades

Cycling & Compatibility Rules

- Alternate high-irritancy actives
- Avoid peel + retinoid + BPO same night
- Post-procedure: barrier-only until healed
- Re-introduce actives slowly

Take-Home Longevity Algorithm

- Daily SPF AM + retinoid PM + barrier repair
- Add-ons only if pathway-matched
- mTOR agents = emerging longevity adjuncts
- Design for decades, not weeks

Longevity Skin Care

- Prevention + repair + tolerance
- Simple, biologically matched routines win long-term

Patient Mindset Shift

"I want to look younger"

"I want ways to age gracefully"

No more "Chasing Lines"

- Why "looking younger" is an outdated metric
- Rejuvenation = cellular function, barrier integrity, inflammation control
- Skin quality > isolated fixes
- Subtle clinical pearls (no deep dives, just credibility signals)

Future-Proofing Skin

Aesthetics --> preventative, rejuvenation with longevity, not reactive

Skin = Organ

Treat it with time

Restoring balance and confidence

Protecting identity and natural expression

Why younger patients are entering aesthetics earlier—and what that means ethically and clinically

Aggression to Precision: A Smarter Aesthetic Paradigm

Targeted, biologically informed intervention

Lower doses, smarter placement, better timing

Fewer dramatic changes, more consistent vitality

The Early Entry of Aesthetics: A Cultural Shift

Social media markets aesthetic treatments not only to adults, but to the younger generation as well

Aesthetics in Adolescence?

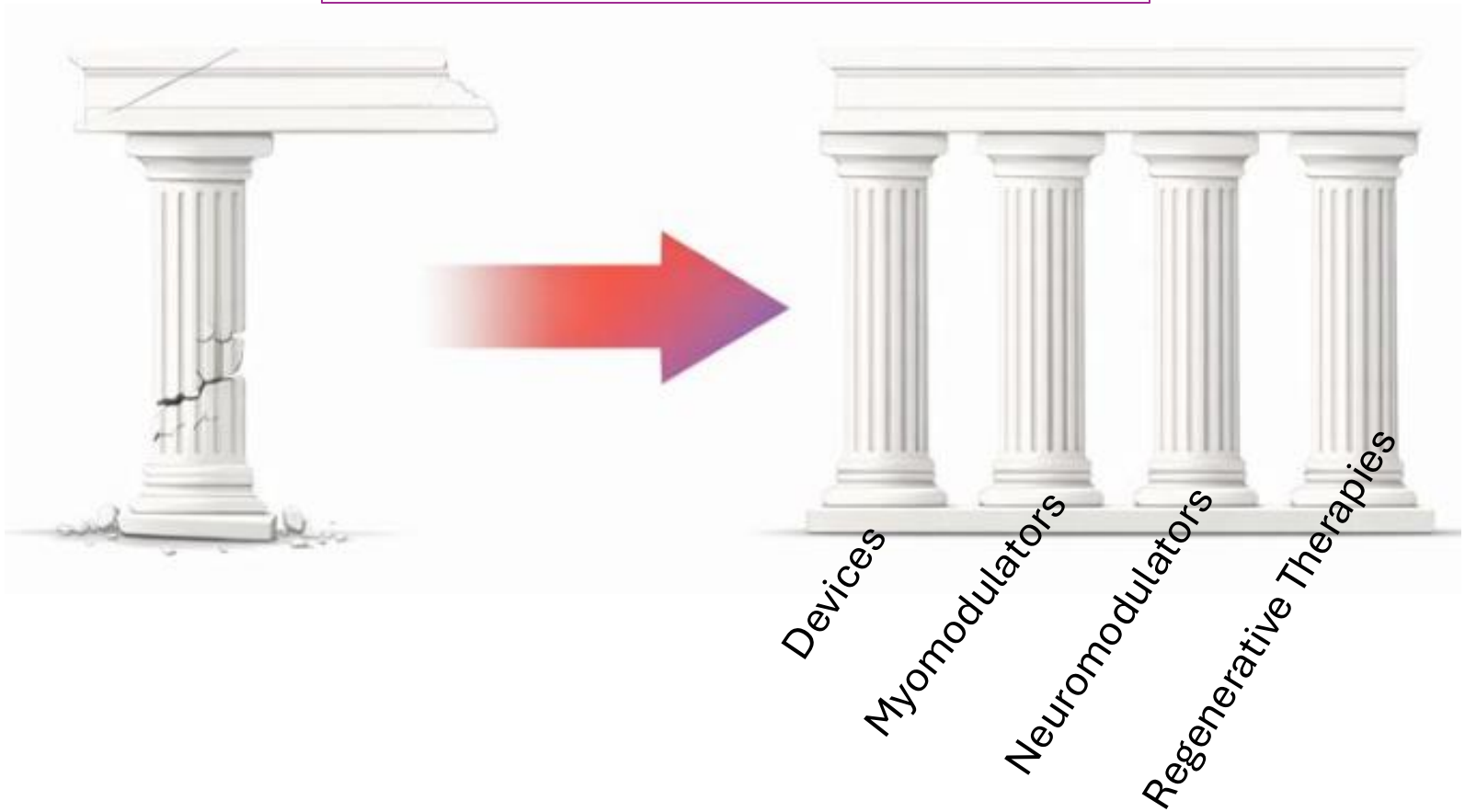
- The beauty of youth
- Managing expectations while being supportive
- Identity matters, but so does confidence!
- Important: skincare education + what is needed at their age
  - acne, acne scarring, barrier repair, aesthetic corrections if appropriate

Restoring Function and Confidence

Targeted neuromodulator placement was used to address a neuromuscular imbalance affecting smile symmetry in this 18-year-old patient

Combination Therapy as a Longevity Strategy

Aging is multi-factorial



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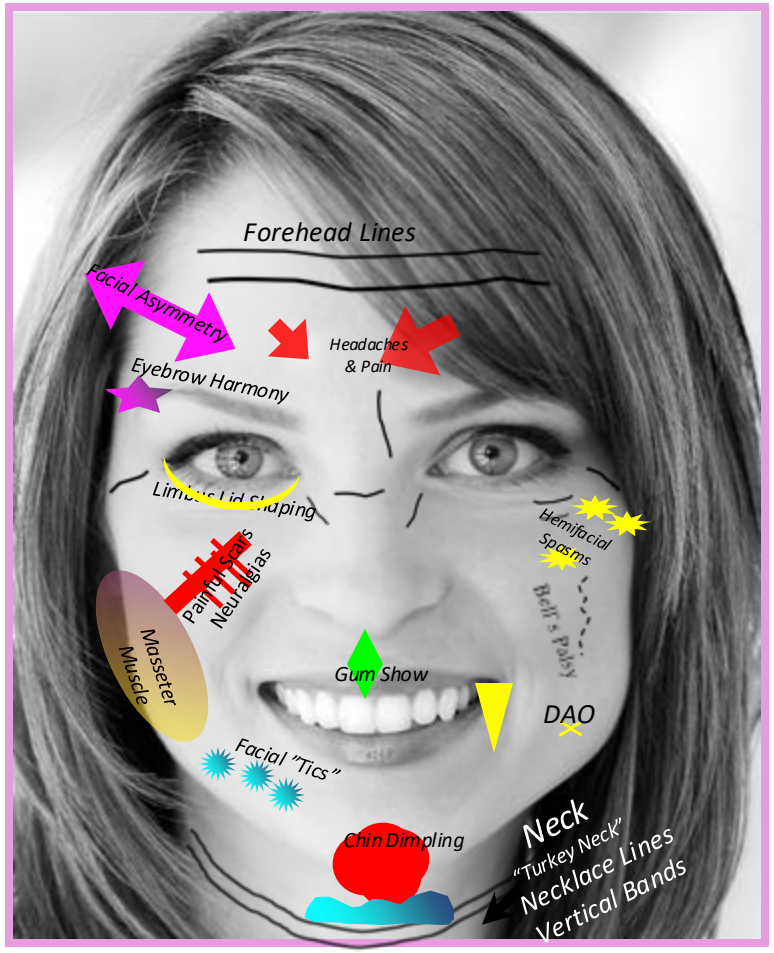
Facial Beautification



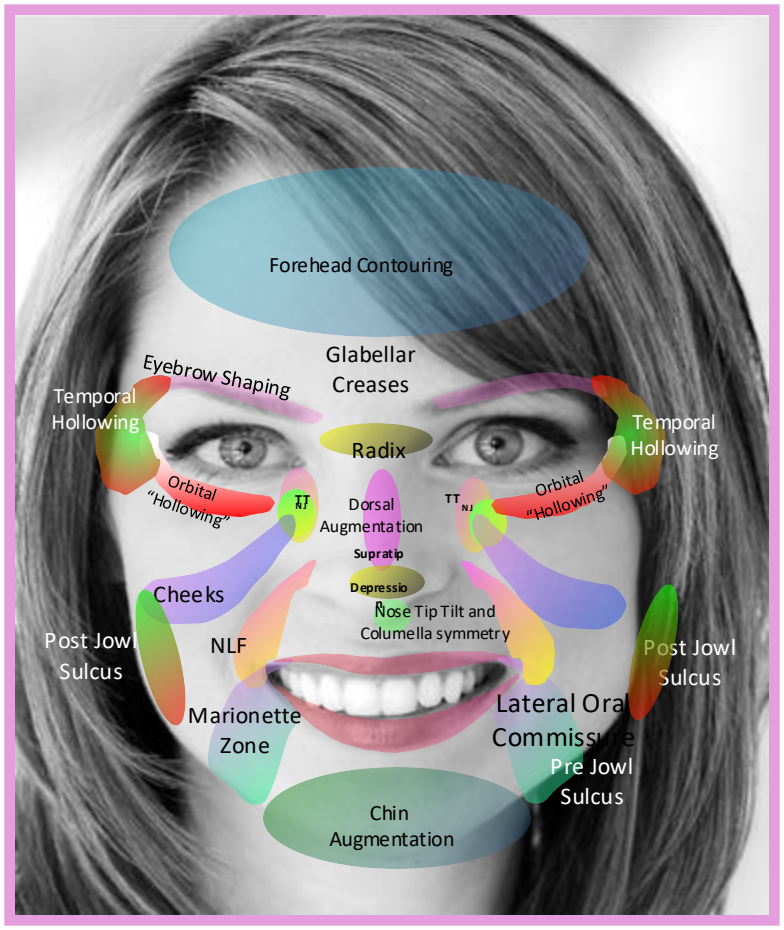
Neuromodulator Injection Sites

Global Approach

Skincare

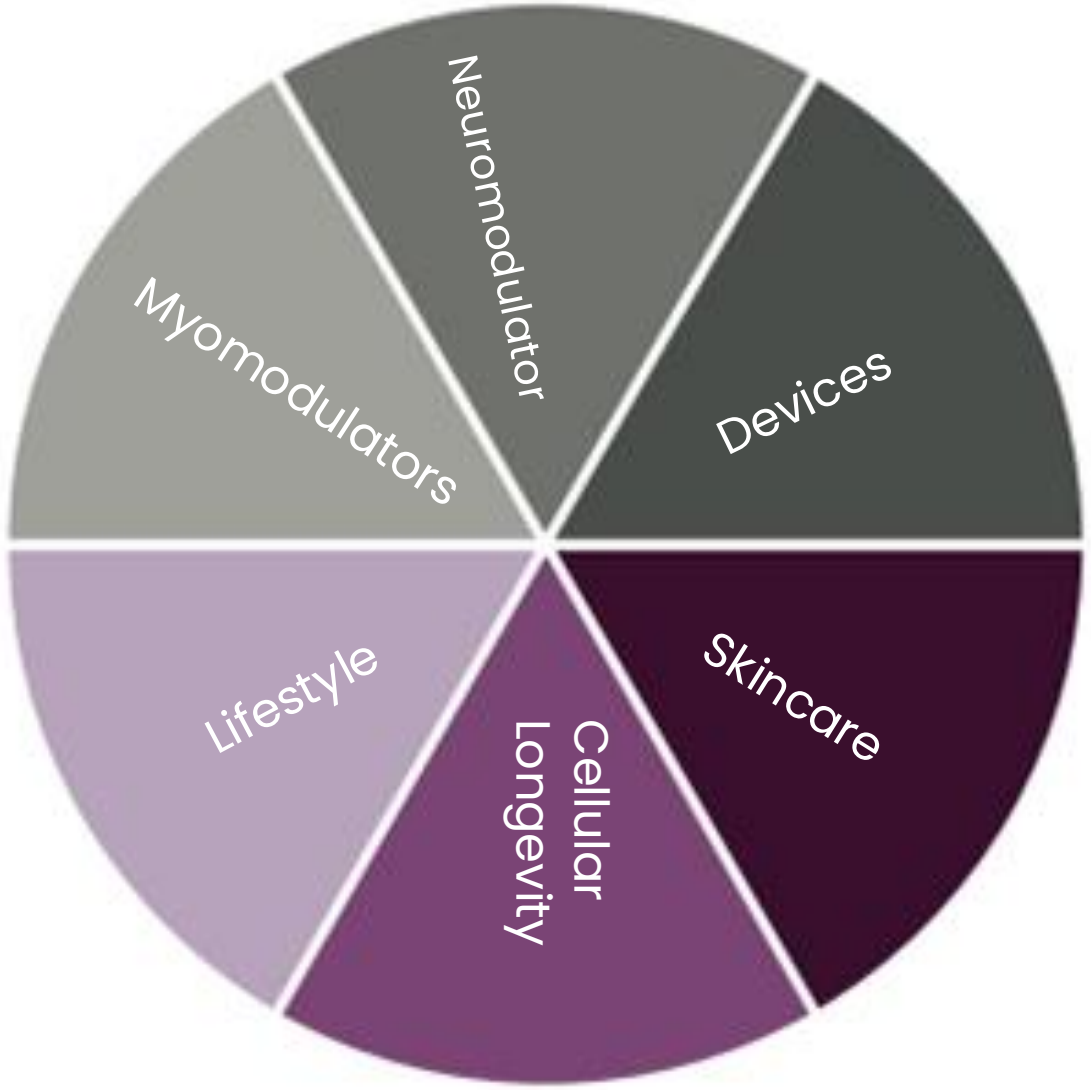
Combine

Devices



Advanced Injectable Sites

Combination Approach is Best!



My Approach

1

Discussion

Understand your patient's goals and expectations

2

Assessment

Analyze anatomy and skin quality

3

Expectations

Set expectations of treatment outcomes and approximate number of treatments required

Approach:

- Teoxane RHA-1
- Juvederm Voluma
- Neuromodulator
- Sofwave

Approach:

- Teoxane RHA-1
- Restylane Refyne
- Restylane Kysse
- Restylane
- Juvederm Ultra
- Restylane Lyft
- Neuromodulator

Approach:

- Restylane Kysse
- Sculptra
- Teoxane RHA-1
- Teoxane RHA-2
- Neuromodulator

Combining Devices with Neuromodulators + Filler

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Approach:

- Moxi/BBL
- Sofwave
- Teoxane RHA-1
- Restylane Contour
- Neuromodulator

Approach:

- BBL
- Daxxify
- Restylane Lyft
- Teoxane RHA-1
- Juvederm Voluma

Approach:

- BBL
- Neuromodulator
- Teoxane RHA-1
- CO2 TotalFx

Approach:

- Neuromodulator
- Teoxane RHA-1
- Teoxane RHA-3
- CO2 TotalFx

Treatment:

- Moxi/BBL Combo
  - After 2 sessions

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Treatment:

- CO2 TotalFx
- CO2 ActiveFx

Fotona Hairlase

03/2020 08/2021 09/2022 02/2023 06/2023

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Fotona Hairlase

03/2020 01/2021 06/2022 08/2023 04/2024

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Lifestyle levers that show up in skin

- **Strength**
  → 2–3x/week
- **Sleep/Stress**
  → hot flashes
  + cortisol control
- **Protein**
  → 1.2–1.6 g/kg/day
  + omega-3s
- **Sun/Lifestyle**
  → no smoking + moderate alcohol + SPF daily

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Diet adaptations

PRE-MENOPAUSE

- Emphasize whole-food anti-inflammatory eating: leafy greens, berries, lean protein, omega-3 fats
- Limit sugar and seed oils
- Support gut health: fermented foods, fiber

PERI-MENOPAUSE

- Increase phytoestrogens (flaxseeds, soy in moderation) to gently support hormone balance
- Prioritize magnesium-rich foods for mood, sleep, and PMS-like symptoms
- Reduce processed carbs: helps with bloating, brain fog, and mood swings

POST-MENOPAUSE

- Increase calcium and vitamin D through diet and/or supplements
- Add protein to maintain lean mass (1.2–1.5g/kg/day)
- Focus on heart: healthy fats (avocados, nuts, olive oil) as cholesterol may rise
- Hydration becomes more important: estrogen drop can lead to drier skin and mucosa

The Future of Aesthetics

Longevity- first planning replaced age-based connection

Regenerative and biologic therapies become foundational, not adjunctive

Precision over volume defines successful outcomes

Earlier, ethical intervention focused on skin health, not alternation

Aesthetic physicians evolve from proceduralists to long-term skin health strategists

Key Takeaways

1

Aging is **multi-factorial** and requires combination strategies

2

Traditional "anti-aging" approaches are limited and short-term.

3

The future of aesthetics is preventative, precise, and regenerative.

4

Longevity-focused care prioritizes **cellular repair and resilience.**

5

Long-term results come from holistic, decades-based planning

6

Aesthetic treatments show **high patient satisfaction**, with both preventative & corrective benefits

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