



# Peptides: Hype or Hope?

Nutritional Strategies to Support or Substitute



# The Holistic Mental Fitness Company



We help people feel good again –

- by rebalancing the **Gut-Immune-Brain-Axis**

Thousands of customers supported through burnout, fatigue, anxiety, and sleep problems.



Established the world's first Mental Fitness Retreat



Certified ~1,000 Mental Wellness Coaches



Launched 3 science-based nutraceuticals (and Affiliate program)



# Peptides: Taking vs Making

How your body and nutrients shape peptide balance



- 1 Peptides are exciting but complicated
- 2 Quality and safety are the biggest blind spots
- 3 Nutrition can mimic or amplify peptide pathways

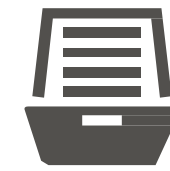
# The Peptide Gold Rush

Peptides seem to be everywhere...

Miraculous claims...

Limited evidence...

Grey-market...



## GLP-1 drugs

Dominate headlines and  
“normalize” at-home injections



## Wellness Clinics

Offer clients peptide “stacks”  
Not just “Anti-Aging” Clinics



## Clients Confused?

”Should I be taking these?”



## Biohacking Culture

Accelerating demand

# Your Client's "Peptide Research Team"

TikTok biohacker  
Podcast host  
Influencer doctor  
Reddit thread



And then they ask their nutrition professional  
if it's safe???



# Quick Show of Hands

How many clients ask you about peptides?

How many are already using them?

How many feel comfortable advising them?



# Why Practitioners Should Care

Clients are *already* experimenting with peptides

Holistic Nutrition professionals can provide  
*guidance and safety*



# The Practitioner Opportunity

Provide context

Identify safety issues

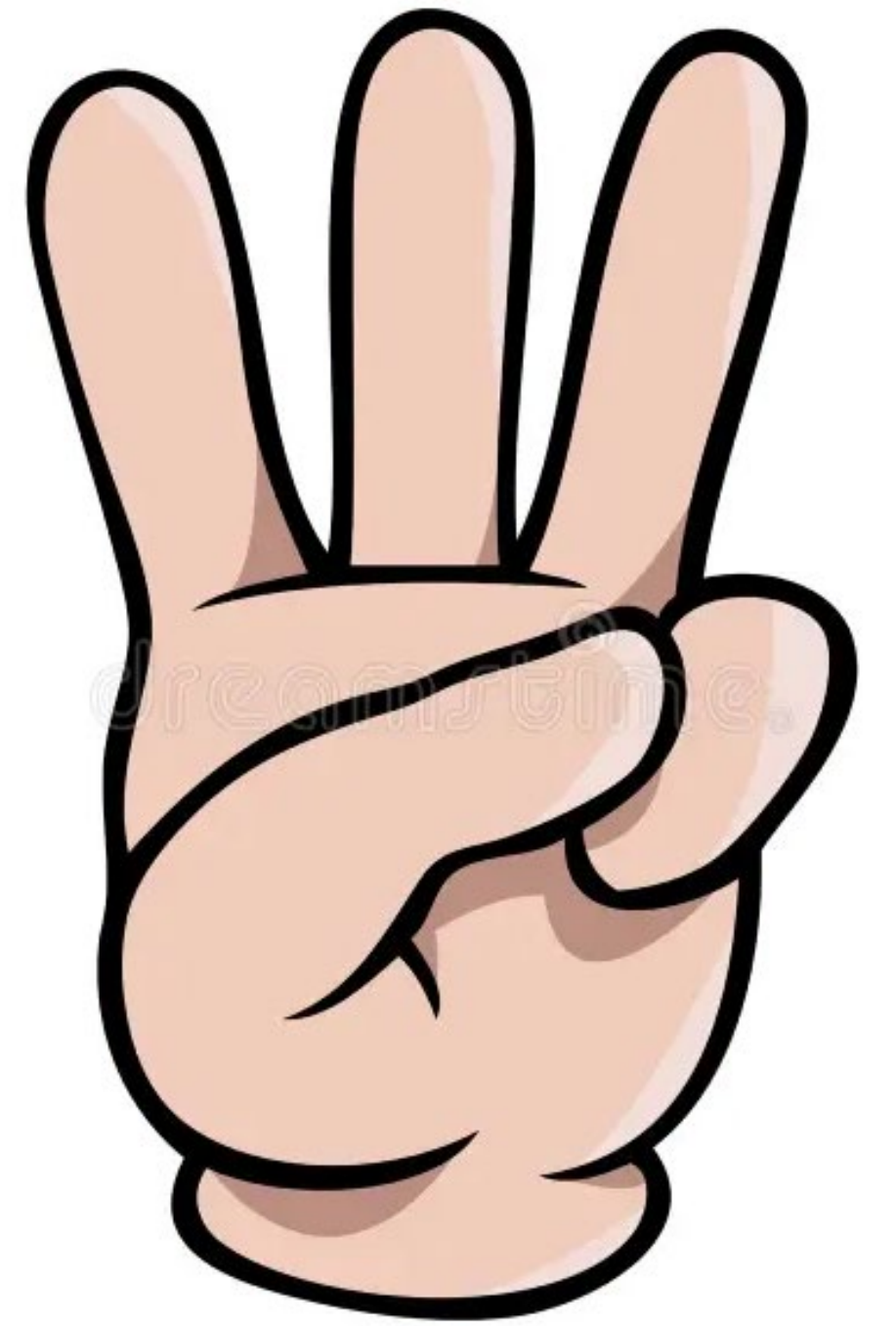
Support metabolic foundations

Offer nutritional alternatives



# Today's Three Messages

1. Peptides are powerful - but complicated (and nuanced)
2. Quality and sourcing are major concerns
3. Nutrition can mimic or amplify peptide pathways



# What Are Peptides?

Short chains of amino acids that act as 'messenger molecules' of the body

Roles:

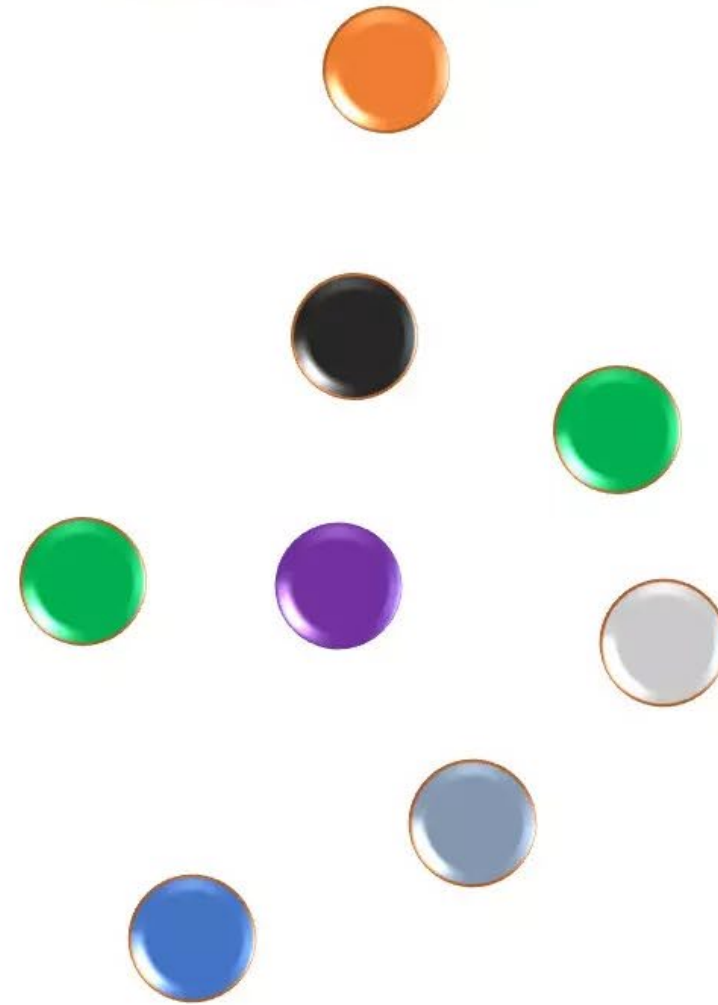
Signaling

Repair

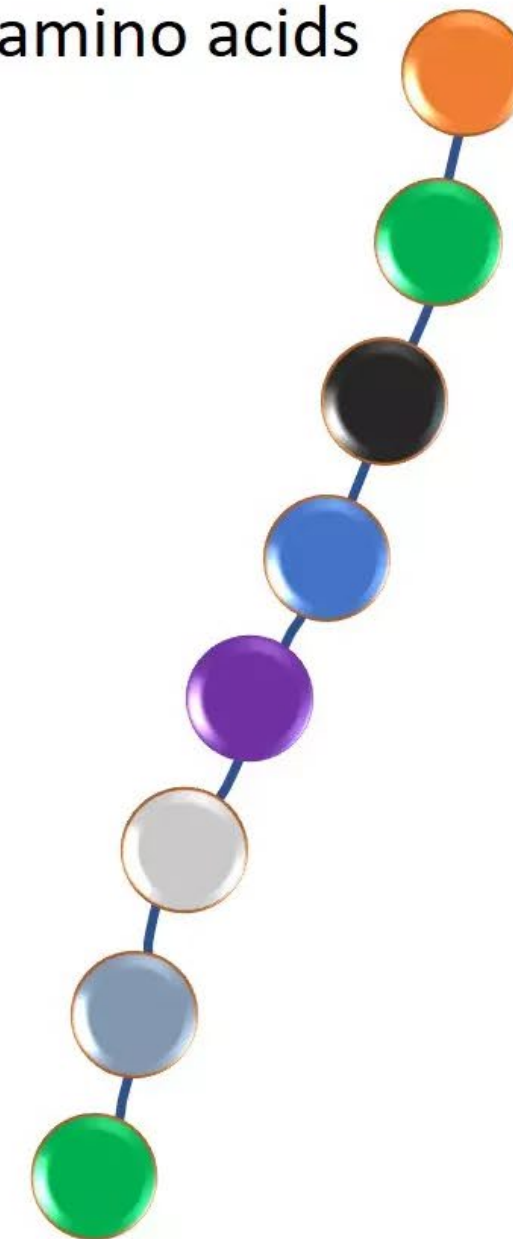
Metabolism

Brain function

Individual  
Amino Acids



Peptide, a chain of  
amino acids



Protein, a longer amino acid  
chain with secondary structure



Table 1 | Top peptide drugs by sales

| Generic name          | Most common brand names                                                                                    | Companies                       | Indication                         | First approval | Sales in 2019 (US\$ million) |
|-----------------------|------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------|----------------|------------------------------|
| Insulin and analogues | Ademelog, Apidra, Humulin, Humalog, Insuman, NovoMix, NovoRapid, Lantus, Levemir, Ryzodeg, Tresiba, Toujeo | Novo Nordisk, Eli Lilly, Sanofi | Diabetes                           | 1982           | 25,000                       |
| Dulaglutide           | Trulicity                                                                                                  | Eli Lilly, Dainippon Sumitomo   | Diabetes                           | 2014           | 4,394                        |
| Liraglutide           | Victoza, Saxenda                                                                                           | Novo Nordisk                    | Diabetes, obesity                  | 2010           | 4,142                        |
| Leuprolide            | Lupron, Eligard                                                                                            | AbbVie, Astellas, Takeda        | Cancer                             | 1985           | 2,022                        |
| Semaglutide           | Ozempic, Rybelsus                                                                                          | Novo Nordisk                    | Diabetes, obesity                  | 2017, 2019     | 1,694                        |
| Octreotide            | Sandostatin                                                                                                | Novartis                        | Cancer                             | 1988           | 1,585                        |
| Glatiramer            | Copaxone, Glatopa                                                                                          | Teva, Sandoz                    | MS                                 | 1996           | 1,531                        |
| Teriparatide          | Forteo                                                                                                     | Eli Lilly                       | Osteoporosis                       | 2002           | 1,405                        |
| Cyclosporine          | Restasis                                                                                                   | Allergan                        | Immune diseases, organ transplants | 1983           | 1,189                        |
| Lanreotide            | Somatuline                                                                                                 | Ipsen                           | Acromegaly                         | 2007           | 1,124                        |
| Carfilzomib           | Kyprolis                                                                                                   | Amgen                           | Multiple myeloma                   | 2012           | 1,044                        |
| ACTH                  | Acthar                                                                                                     | Mallinckrodt                    | IS, MS                             | 1950           | 953                          |
| Linaclotide           | Linzess, Constella                                                                                         | Allergan, Astellas Pharma       | IBS-C                              | 2012           | 877                          |
| Romiplostim           | Nplate, Romiplate                                                                                          | Amgen, Kyowa Kirin              | Chronic ITP                        | 2008           | 841                          |
| Goserelin             | Zoladex                                                                                                    | AstraZeneca                     | Cancer                             | 1989           | 813                          |
| Etelcalcetide         | Parsabiv                                                                                                   | Amgen, Ono Pharma               | Hyperparathyroidism                | 2017           | 693                          |
| Exenatide             | Byetta, Bydureon                                                                                           | AstraZeneca                     | Diabetes                           | 2005           | 659                          |
| Teduglutide           | Gattex, Revestive                                                                                          | Takeda                          | Short bowel syndrome               | 2012           | 555                          |
| Vasopressin           | Vasopressin                                                                                                | Endo Pharma                     | CDI                                | NR             | 532                          |

Sources: 2019 company financial reports, <https://www.fda.gov>, and global sales analysis reports. ACTH, adrenocorticotrophic hormone; CDI, central diabetes insipidus; IBS-C, irritable bowel syndrome with constipation; IS, infantile spasms; ITP, immune thrombocytopenia; MS, multiple sclerosis; NR, not recorded.

## Some FDA-Approved Peptides With Frequent Off-Label Use

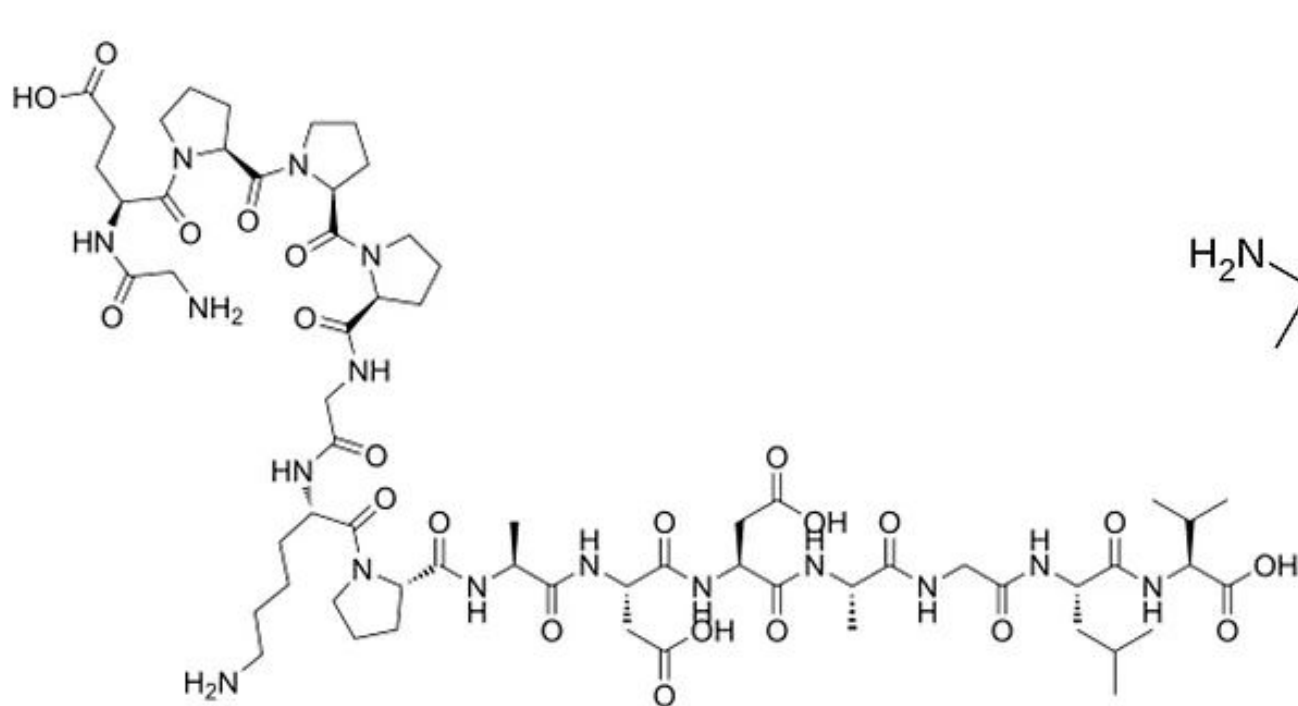
| Peptide                                      | Mechanism of Action                                                          | Off-Label Use                                                                            | FDA Indication                                 |
|----------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------|
| GLP-1 peptides<br>(Semaglutide, Tirzepatide) | Gut hormone mimetics<br>Glucagon-like peptide,<br>gastric inhibitory peptide | Addiction, migraine,<br>autoimmune diseases,<br>polycystic ovary syndrome,<br>and others | Diabetes and obesity                           |
| Sermorelin                                   | Analog to growth<br>hormone-releasing<br>hormone                             | Muscle mass increase, fat<br>mass decrease, wound<br>healing, anti-aging                 | Children with growth<br>hormone deficiency     |
| Tesamorelin                                  | Analog to growth-<br>hormone releasing factor                                | Muscle mass increase,<br>abdominal fat decrease,<br>cognitive health                     | HIV Lipodystrophy                              |
| Thymosin Alpha-1<br>(Zadaxin)                | Hormone-like peptide<br>produced by thymus                                   | Immune system health                                                                     | Chronic hepatitis B and<br>cancer chemotherapy |

## Non-FDA Approved, Injectable Peptides

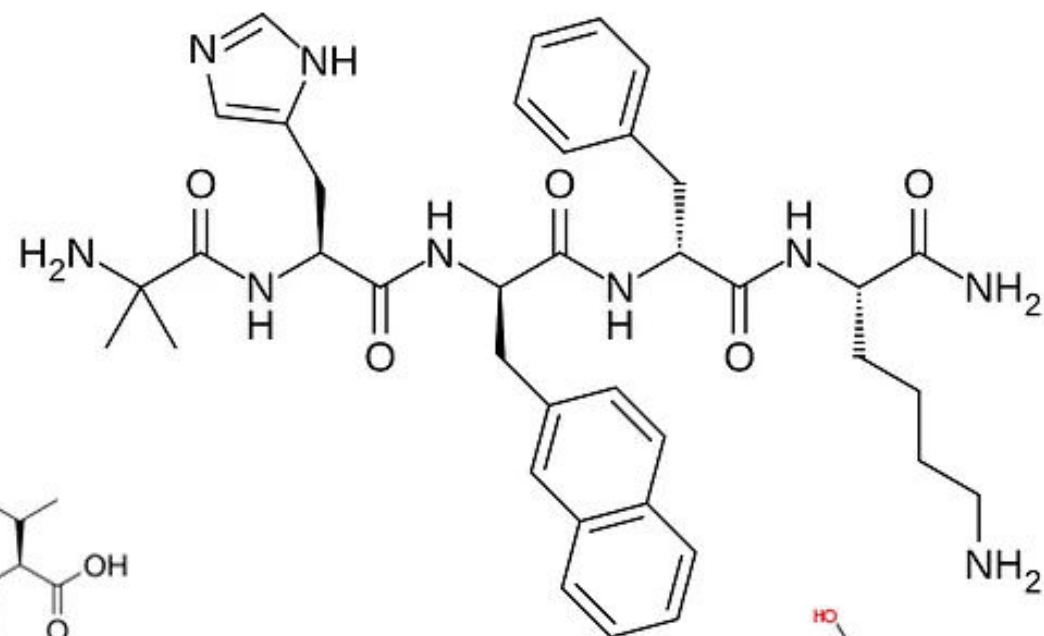
| Peptide      | Putative Mechanism                     | Purported Benefits                                   | Evidence*               |
|--------------|----------------------------------------|------------------------------------------------------|-------------------------|
| BPC-157      | Tissue repair, anti-inflammation       | Gut health, muscle repair, neuroprotection           | None<br>WADA prohibited |
| CJC-1295     | HGH/IGF-1 release                      | Increase muscle strength, improved sleep, cognition  | None                    |
| Epitalon     | Telomerase activator                   | Anti-aging, regeneration                             | None                    |
| GHK-Cu       | Stimulated collagen, elastin           | Skin regeneration, anti-inflammatory, wound healing  | None                    |
| Ipamorelin   | Gherlin/growth hormone mimetic         | Increase muscle strength, cognition, sleep, fat loss | None                    |
| TB-500       | Promotes actin production              | Tissue repair, anti-inflammatory, flexibility        | None<br>WADA prohibited |
| Cerebrolysin | Pig brain derived neurotrophic factors | Cognition, protection vs neurodegenerative diseases  | None                    |
| Dihexa       | Hepatocyte-growth factor mimetic       | Improve cognition, memory                            | None                    |
| Melanotan II | Melanocyte stimulating hormone         | Tanning, sexual function                             | None                    |

\*Evidence of efficacy and safety from randomized trials in people; WADA-World Anti-Doping Agency, HGH-human growth hormone, IGF-1-insulin-like growth factor-1

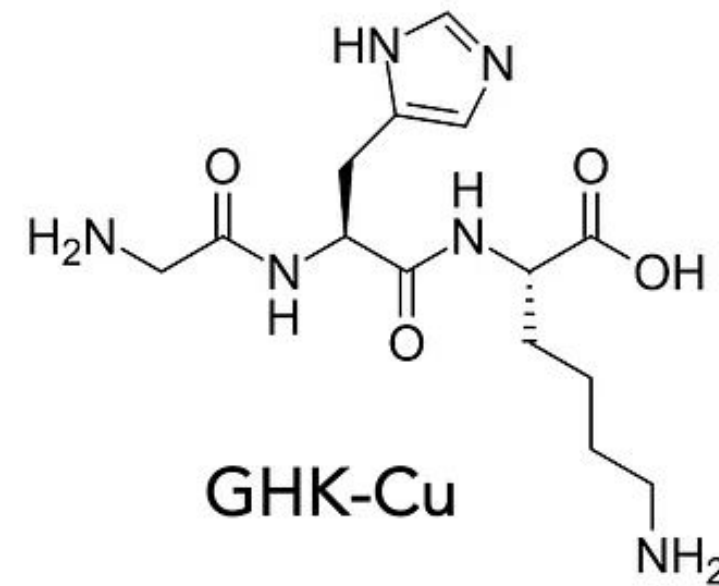
| PEPTIDE                 | SOURCE                    | PRIMARY EFFECTS                                                                    |
|-------------------------|---------------------------|------------------------------------------------------------------------------------|
| BPC-157                 | Synthetic                 | Tissue repair reduces inflammation                                                 |
| CJC-1295                | Synthetic                 | Enhances growth hormone release                                                    |
| TB-500                  | Synthetic                 | Aids in muscle recovery and repair                                                 |
| Creatine Peptides       | Meat, fish, synthetic     | Improves strength, energy production                                               |
| Collagen Peptides       | Animal connective tissues | Supports joint and skin health                                                     |
| Lactoferrin Peptides    | Dairy proteins            | Enhances immune function                                                           |
| Casein-Derived Peptides | Milk proteins             | Promotes muscle recovery and satiety                                               |
| Peptistrong             | Fava Bean                 | Enhances muscle protein synthesis, reduces muscle breakdown, and improves recovery |



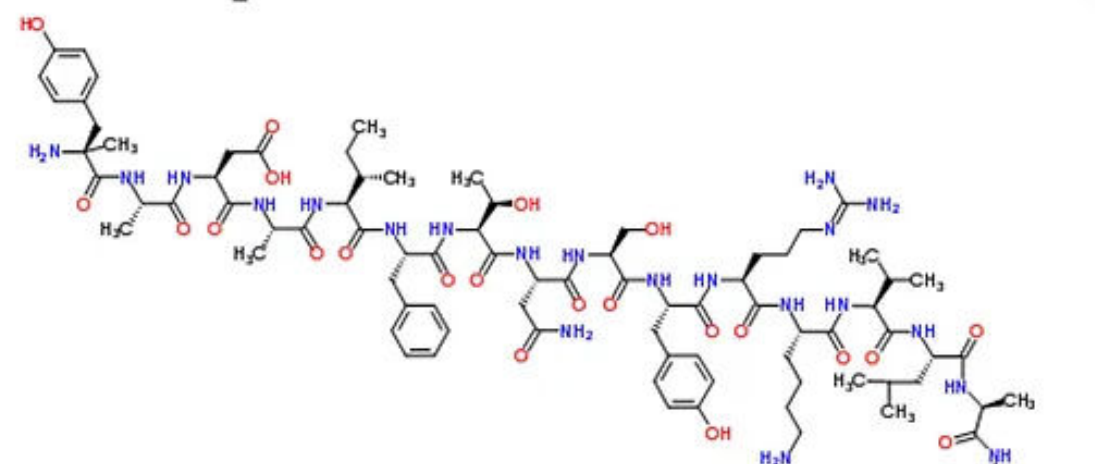
BPC-157



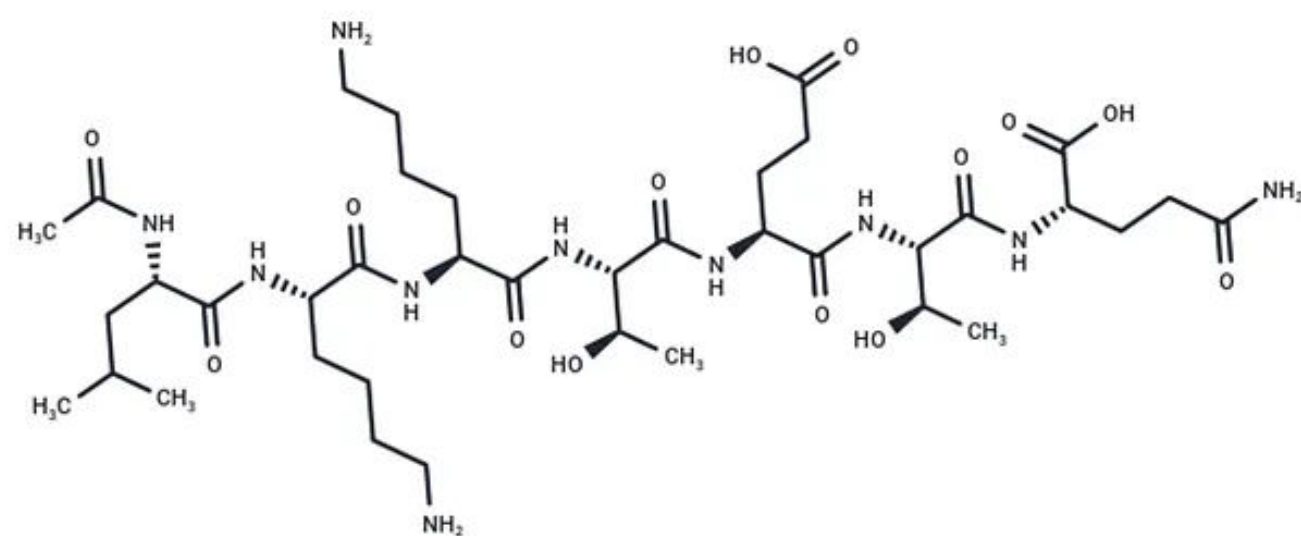
Ipamorelin



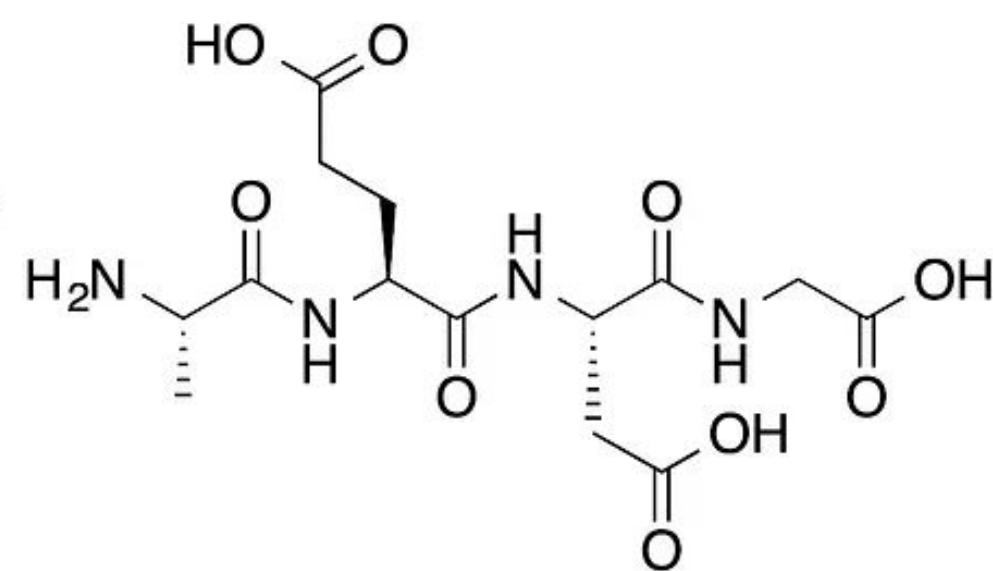
GHK-Cu



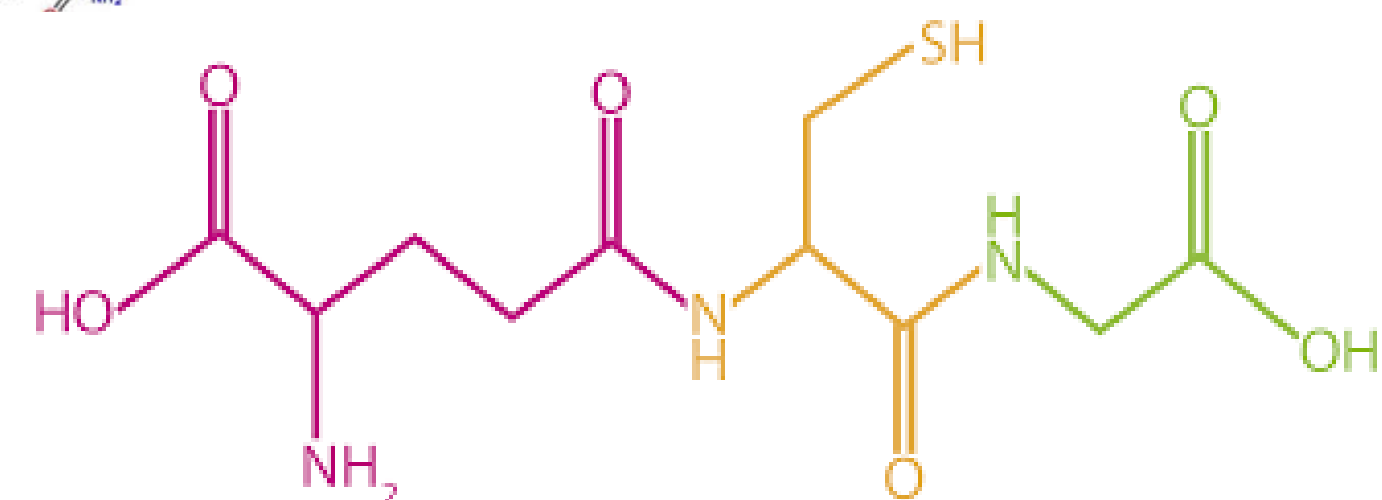
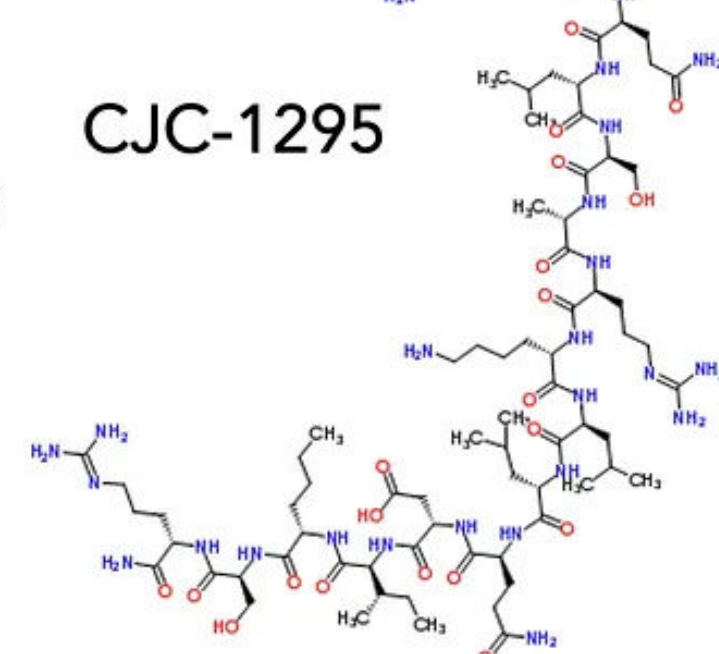
CJC-1295



TB-500



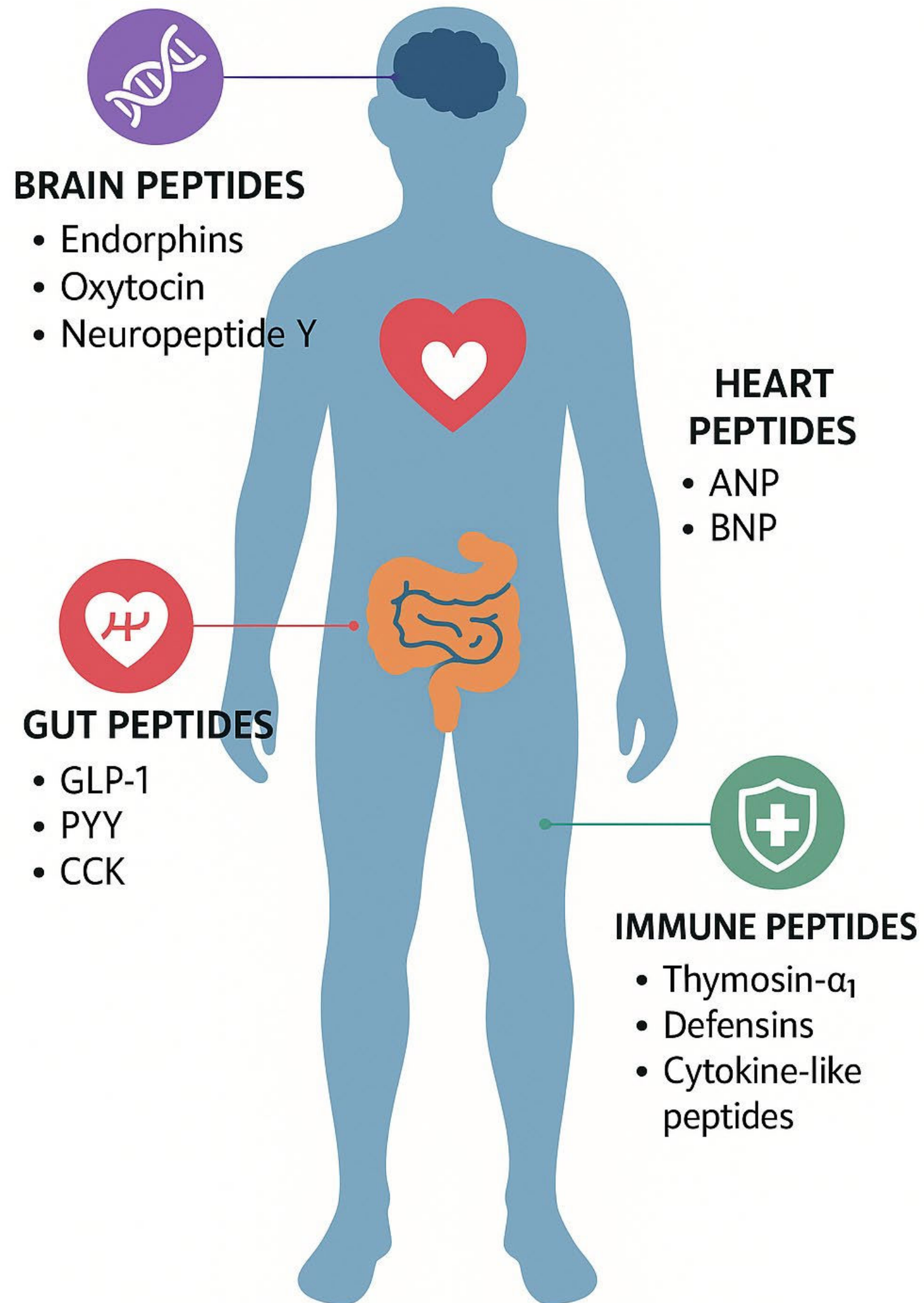
Epitalon



Glutamate

Cysteine

Glycine



## Big picture:

**Gut peptides** → regulate food intake, metabolism, mood via the gut-brain axis.

**Brain peptides** → regulate mood, pain, bonding, and stress.

**Heart/kidney peptides** → regulate blood pressure and fluid balance.

**Immune peptides** → act as rapid-response antibiotics and immune modulators.

# Peptides Work by Sending Signals

*(but these are all very different types of signals)*

GLP-1 → appetite control

Sermorelin/Ipamorelin → growth signaling

BPC-157 → tissue repair

MOTS-c → mitochondrial adaptation



## Take Peptides...

“Shingle that roof!”

“Build that retaining wall!”

- is the house built?
- have the shingles been delivered?
- do we have the right bricks?
- where is the mortar?



## Make Peptides...

- mix the cement
- pour the foundation
- frame the house
- grade the landscape
- shingle the roof
- build that retaining wall



Peptides may be the *foreman shouting commands*, but you still need...

- **Materials** (amino acids, fatty acids)
- **Energy** (ATP)
- **Tools** (enzymes & cofactors/nutrients)
- **Blueprints** (DNA)
- **Supervisors** (hormones/receptors)

...or the house doesn't get built (properly or solidly)...

# Biology Reality Check

Peptides send signals...

But outcomes depend on:

- Gut Health
- Inflammation
- Nutrient Status
- Sleep and Stress



If you're taking peptides –

and not optimizing nutrition, exercise, sleep, stress, inflammation, gut integrity, etc –

you're “blocking” the signals (and your benefits)!!!

# The Peptide Supply Chain Problem

Raw peptide synthesis

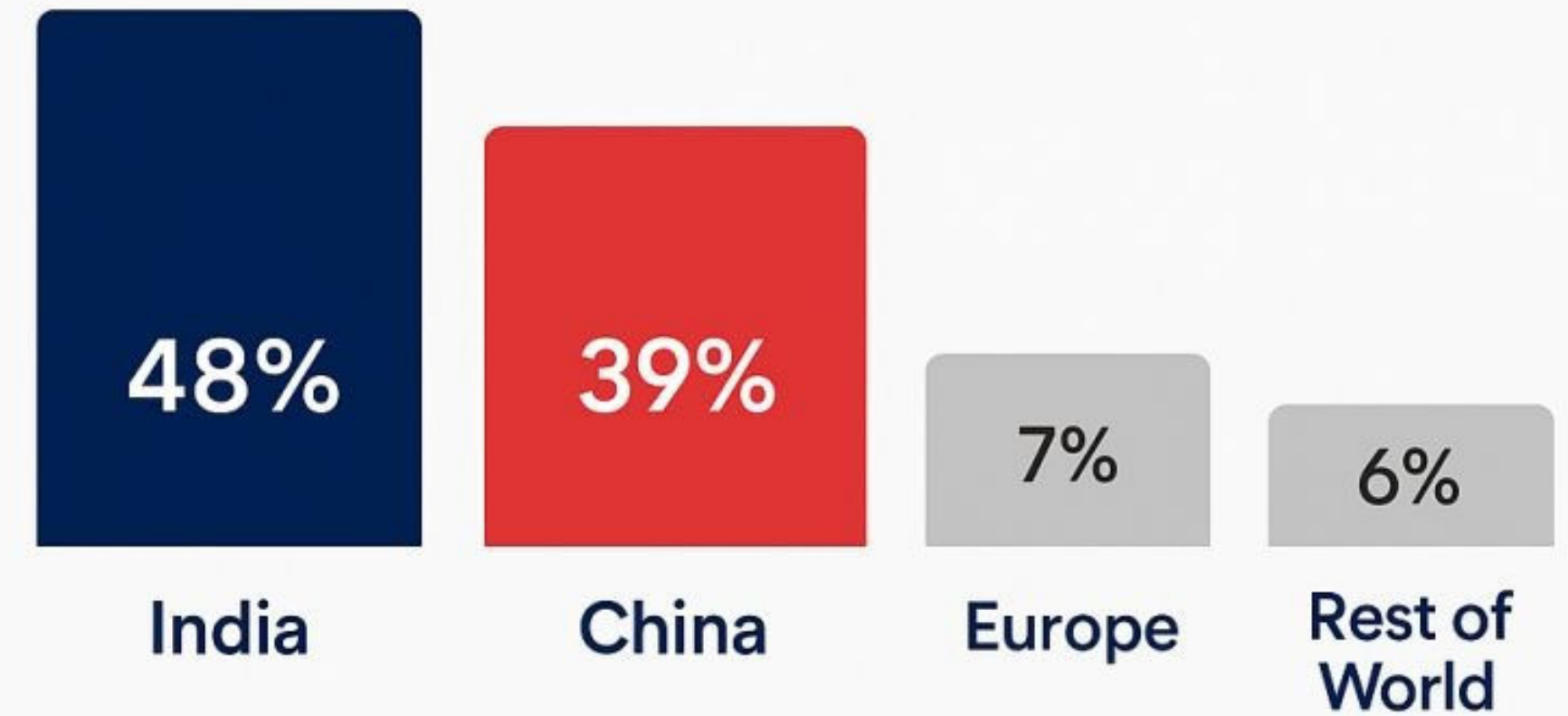
\*API – active pharmaceutical ingredient

International suppliers

“FDA-approved” out the front door”

“Grey-market” out the back door”

## GLOBAL API PRODUCTION



- ~48% of active API Drug Master Files (DMFs) globally filed by Indian manufacturers
- > 80% of the world's API supply from China and India combined
- Global supply chain heavily concentrated, posing a risk

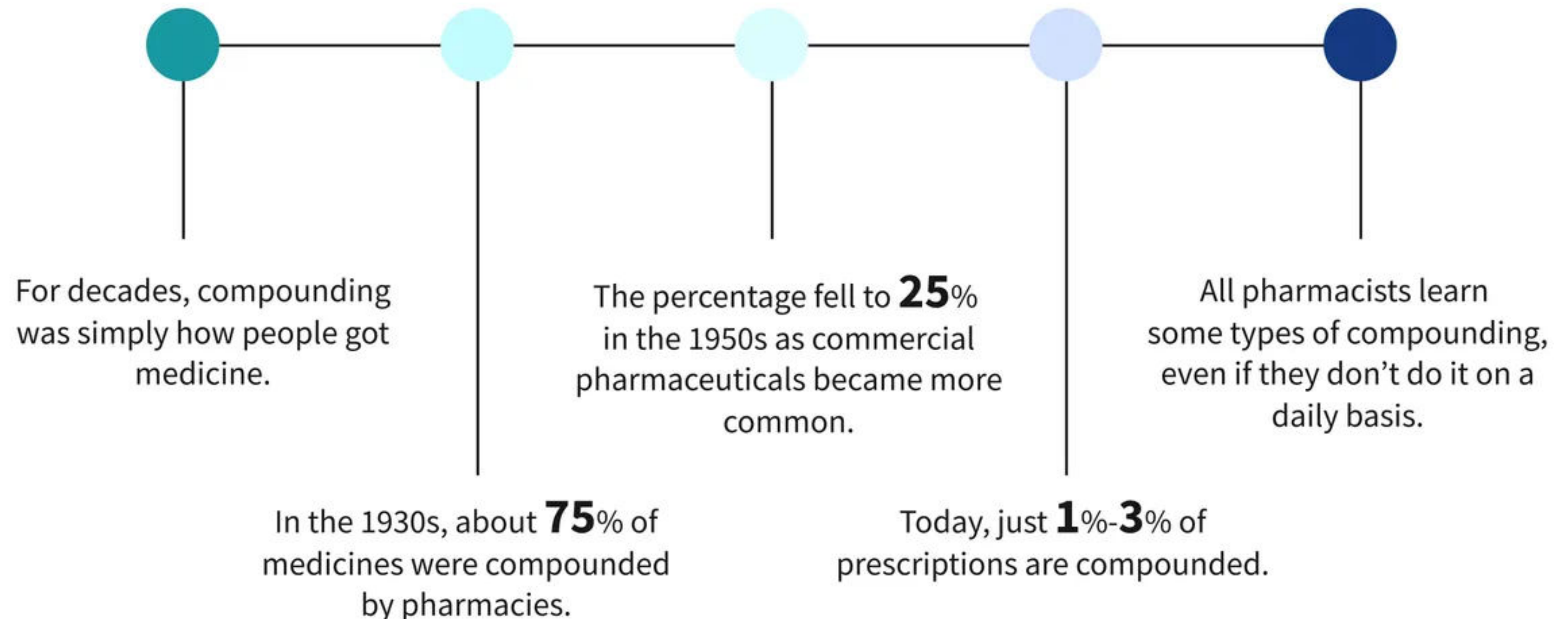
# The Peptide Supply Chain Problem

Compounding pharmacies (State-regulated, FDA-regulated, drugs not “FDA-approved”)

Clinics (off-label use and combinations)

Consumers (buyer beware)

## Compounding Isn't New



# Quality Concerns

Purity

Potency

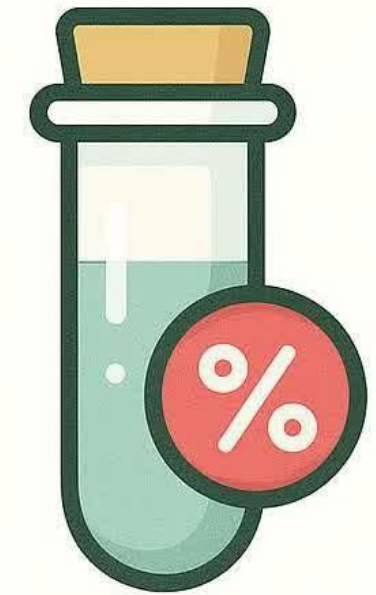
Contamination



Purity



Identity

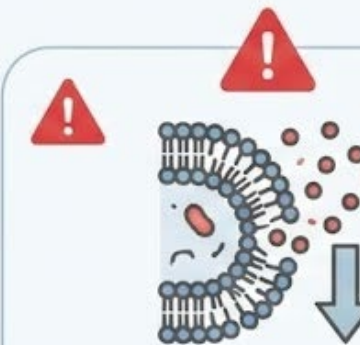


Content

Verification through certificates of analysis (CoA)???

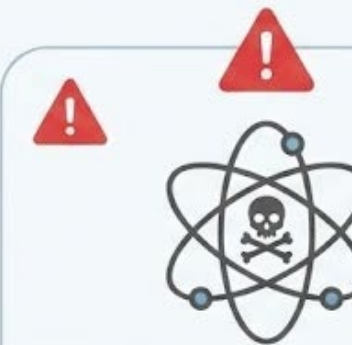


## PEPTIDE CONTAMINATION RISKS



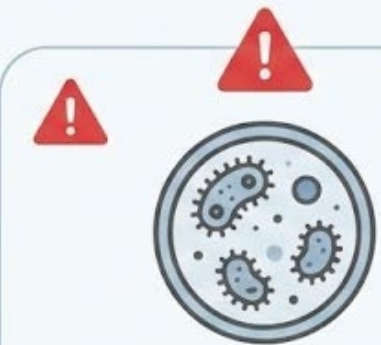
### ENDOTOXINS

Bacterial components causing inflammation, fever, and immune response.



### HEAVY METALS

Toxic elements like lead, mercury, or arsenic that accumulate in the body.



### MICROBIAL

Live bacteria, yeast, or mold growth due to improper sterilization.

⚕️ CONSULT A MEDICAL PROFESSIONAL BEFORE USE. ENSURE PRODUCT QUALITY.



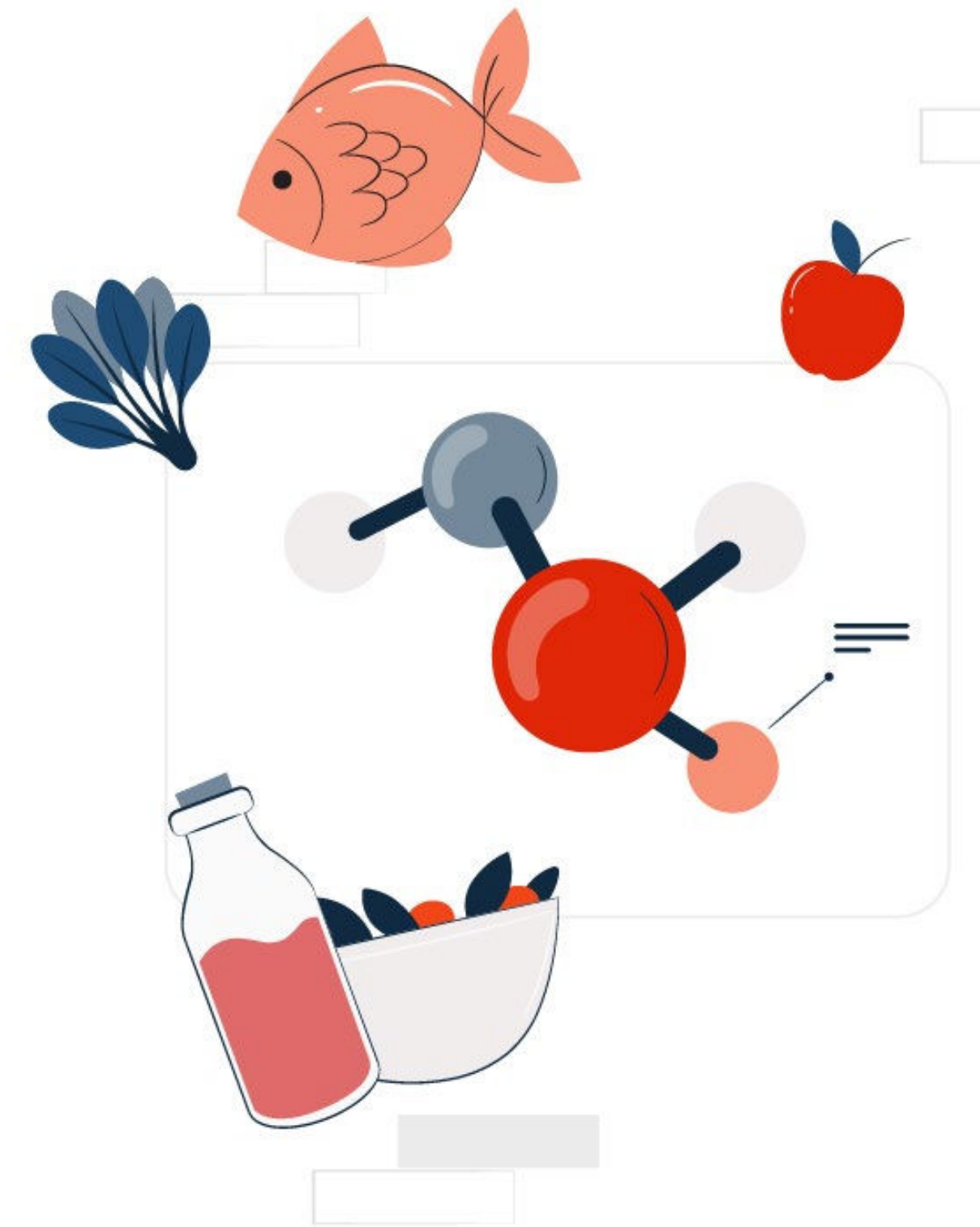
# Nutrition Can Trigger Similar Pathways

Fiber → GLP-1 release

Polyphenols → AMPK activation

Protein → muscle anabolism

Exercise → mitochondrial signaling



# Taking Synthetic Peptides

Examples: BPC-157, TB-500, GH secretagogues

Pros: Targeted effects, rapid outcomes

Cons:

Synthetic  
Injections

Regulatory gray zone (approved drugs or “research chemicals”)?

Long-term safety unknown (e.g. reactivation of dormant tumors)?



# Making Your Own Peptides

Endogenous peptides made in gut, brain, immune tissues

Examples:

GLP-1 (small/large intestine)

BPC (stomach)

Endorphins (brain)

Stimulated by...

Diet

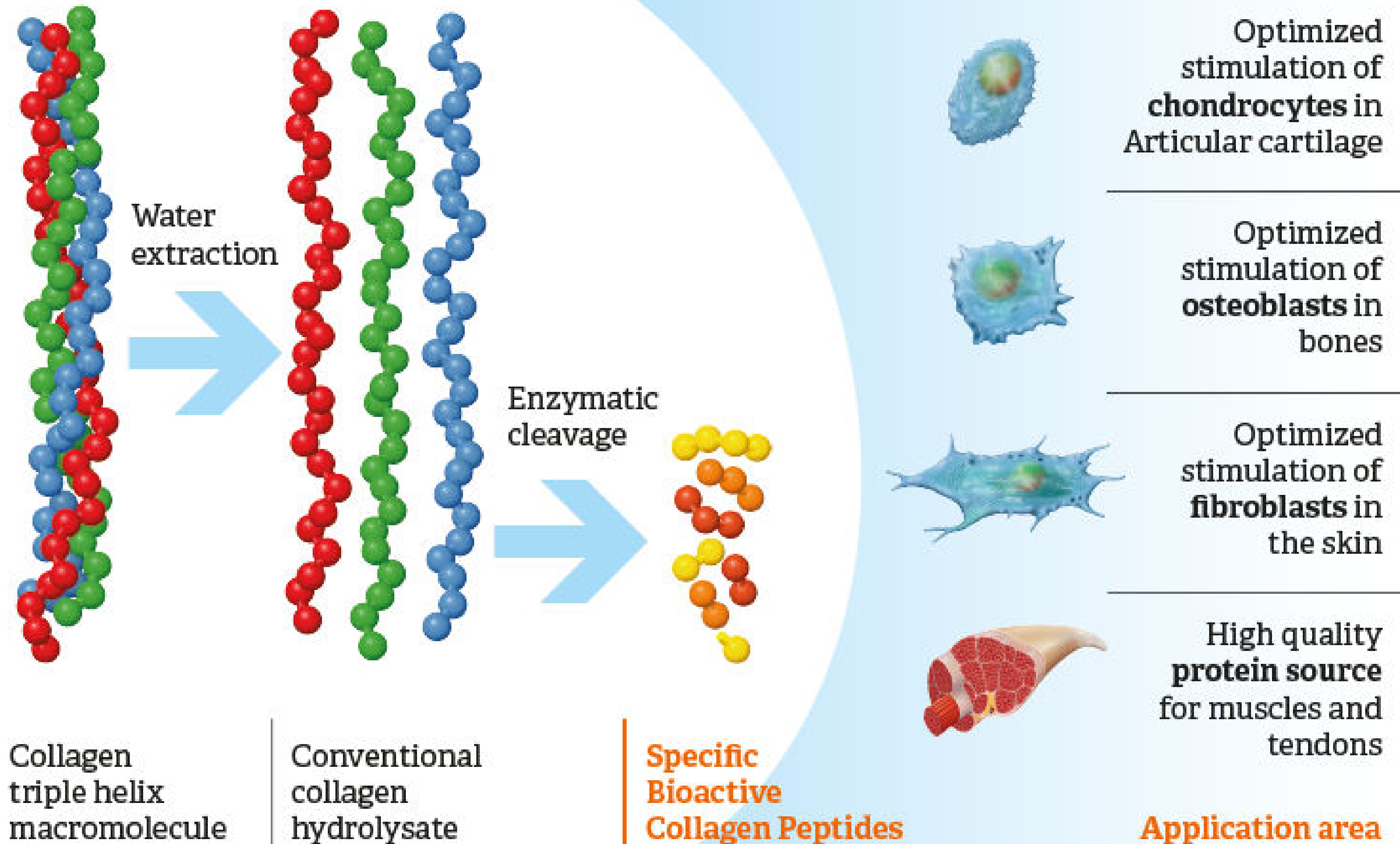
Microbiome activity

Exercise

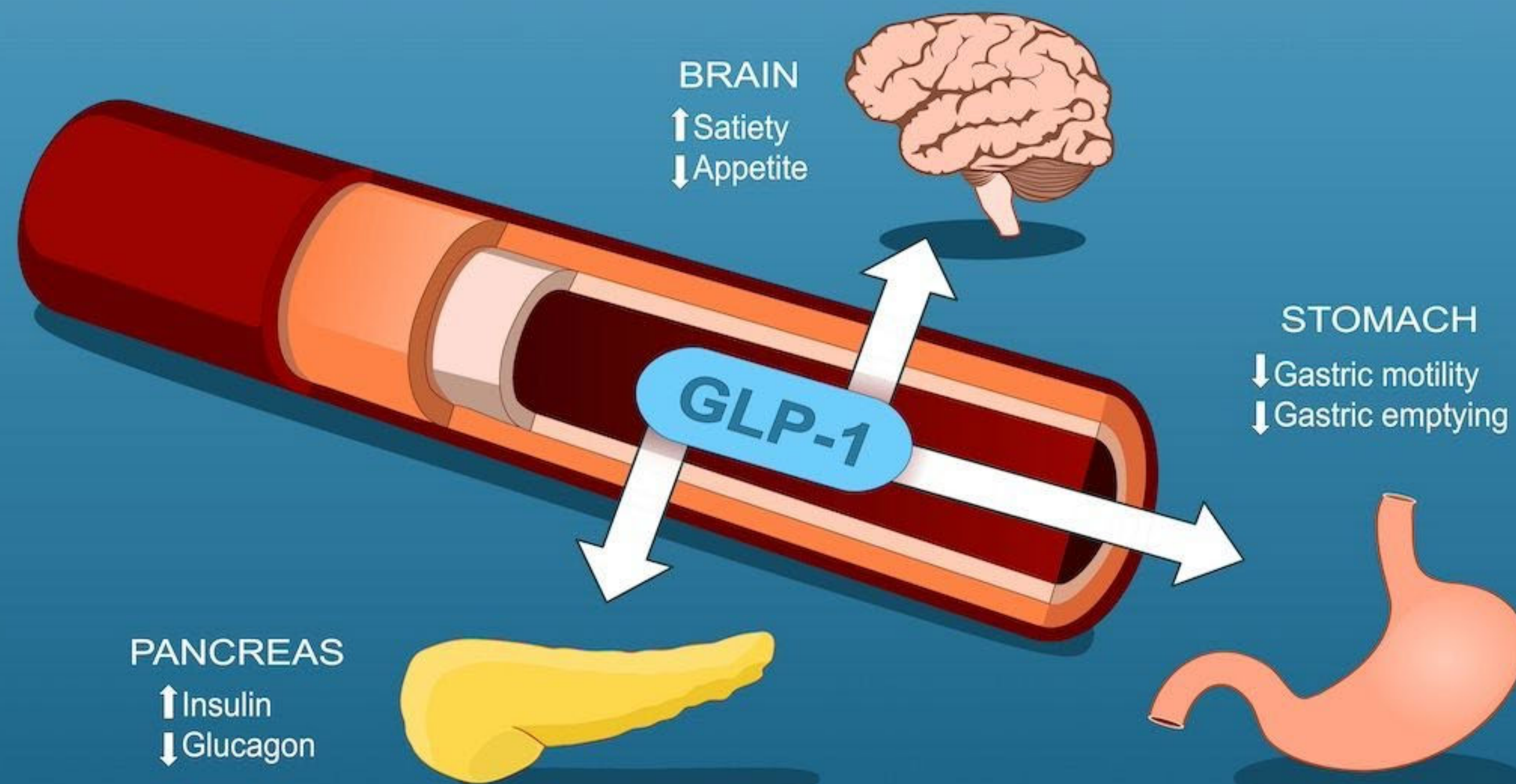
Sleep (Circadian rhythm)

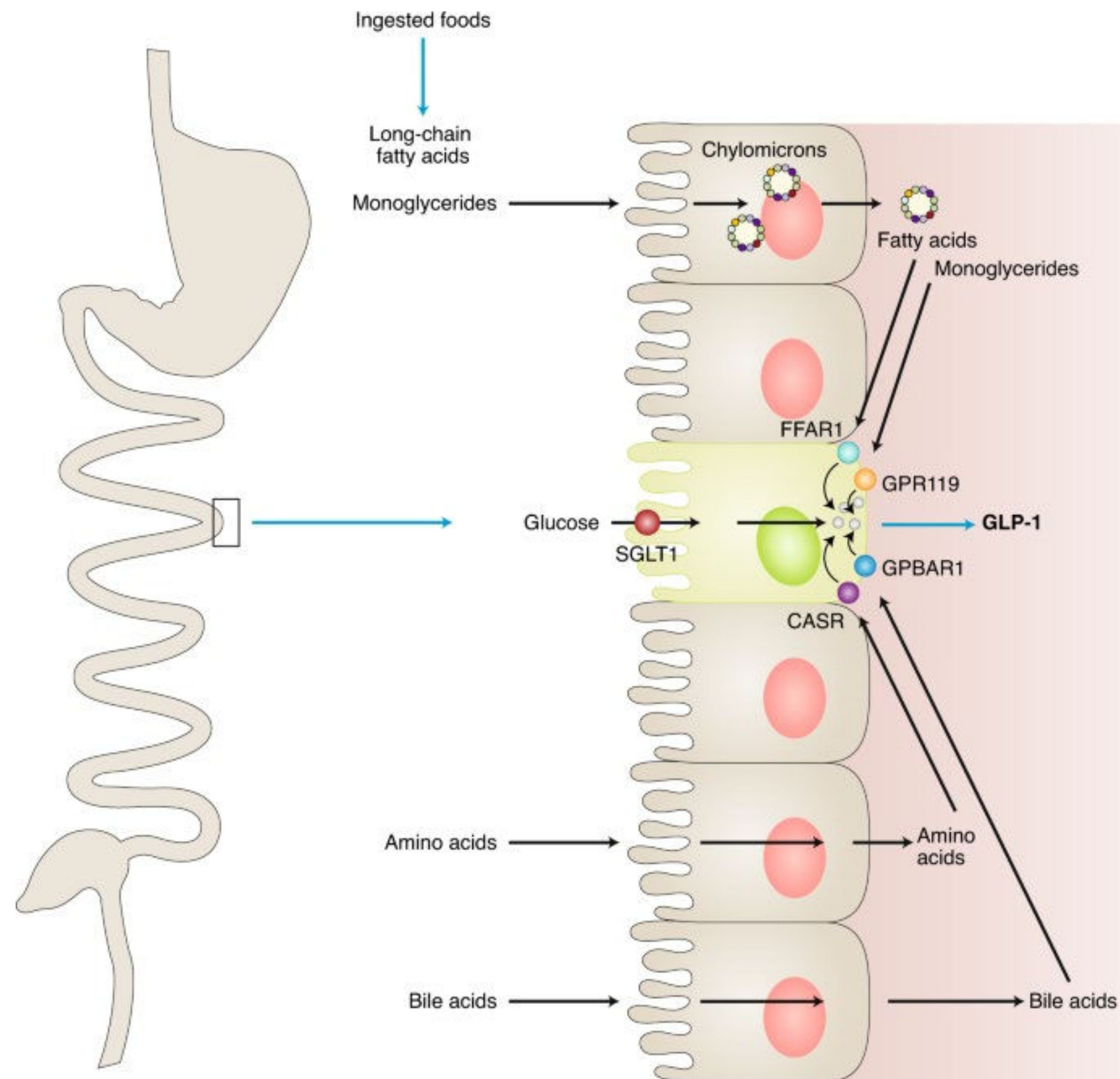


# Production of Bioactive Collagen Peptides for Specific Areas of Application



# Glucagon-like peptide-1





**Example: Akkermansia => Elevates GLP-1, improves gut integrity, modulates metabolism...**

# Your body naturally makes **hundreds of different peptides** across multiple tissue-specific signals

## **Brain & Nervous System**

**Endorphins & Enkephalins** - opioid peptides produced in the brain and pituitary that reduce pain and boost mood (“runner’s high”).  
**Oxytocin** - made in the hypothalamus and secreted from the posterior pituitary; regulate bonding, trust, and connection.  
**Neuropeptide Y (NPY)** - produced in the brain and sympathetic nerves; influences appetite, stress resilience, and anxiety regulation.  
**Substance P** - found in the nervous system; mediates pain perception and inflammatory responses.  
**Melatonin-related peptides** - precursors made in the pineal gland that help regulate circadian rhythm.

## **Muscle & Connective Tissue**

**IGF-1 (Insulin-like Growth Factor-1) fragments** - released in response to growth hormone, involved in muscle repair and growth.  
**Angiotensin peptides** - generated in muscle and blood vessels; regulate blood pressure and vascular tone.  
**Collagen-derived peptides** - produced when collagen is broken down; signal tissue repair and wound healing.

## **Gut & Microbiome**

**GLP-1 (Glucagon-like Peptide-1)** - secreted by intestinal L-cells; regulates blood sugar, appetite, and satiety.  
**PYY (Peptide YY)** - gut hormone that signals “I’m full” after eating.  
**CCK (Cholecystokinin)** - from the small intestine; stimulates bile release and reduces hunger.  
**Defensins** - antimicrobial peptides made by gut epithelial cells; part of the innate immune system.

## **Heart & Vascular Tissue**

**ANP & BNP (Atrial and Brain Natriuretic Peptides)** - released by the heart; regulate fluid balance, sodium excretion, blood pressure.  
**Endothelin peptides** - secreted by vascular endothelium; potent vasoconstrictors that regulate blood flow.

## **Immune System**

**Thymosin- $\alpha$ 1** - from the thymus; modulates immune activity.  
**Cytokine-like peptides (IL-2 fragments, etc.)** - produced by immune cells to coordinate inflammation and defense.  
**Beta-defensins** - secreted by leukocytes and epithelial cells as antimicrobial defenses.

# Nutrition/Nutraceutical Stacks – Flash Cards

## *Weight Loss (GLP-1 agonists, Semaglutide, Tirzepatide)*

Goal: Preserve lean mass, counter GI effects, support satiety and metabolic health

## *Muscle Gain (Ipamorelin, CJC-1295, Tesamorelin)*

Goal: Provide protein, support collagen synthesis, recovery, mitochondrial function

## *Injury Recovery (BPC-157, TB-500, KPV)*

Goal: Accelerate healing, reduce inflammation, enhance tissue remodeling

## *Neuroprotection (Semax, Selank, Cerebrolysin, N-acetyl Semax Amidate)*

Goal: Synergize neurotrophic, anti-anxiety, and focus effects

## *Longevity (PT-141, Kisspeptin, MOTS-c, Epitalon)*

Goal: Hormonal balance, vascular health, mitochondrial resilience

## *Immune Support (Thymosin alpha-1, Thymosin beta-4, LL-37)*

Goal: Immune vigilance and balanced inflammation

# Taking vs Making: The Comparison

| Aspect  | “Take” (Synthetic)                | “Make” (Naturally)               |
|---------|-----------------------------------|----------------------------------|
| Source  | Injections / oral                 | Gut, brain, immune tissues       |
| Speed   | Rapid but short-lived             | Slower but sustainable           |
| Risks   | Regulatory issues, unknown safety | Safe, physiological              |
| Synergy | Targeted effect only              | Systemic, multi-tissue benefits  |
| Support | Rx or gray-market sourcing        | Nutrition, microbiome, lifestyle |

# Case Study 1: Weight Loss Client (GLP-1)

Client: Serena, 44

Goals: Lose 30–40 lbs, improve energy

Symptoms: Hunger, constant cravings, Trouble losing weight...

Doctor recommended GLP-1 medication



# GLP-1 Mechanism

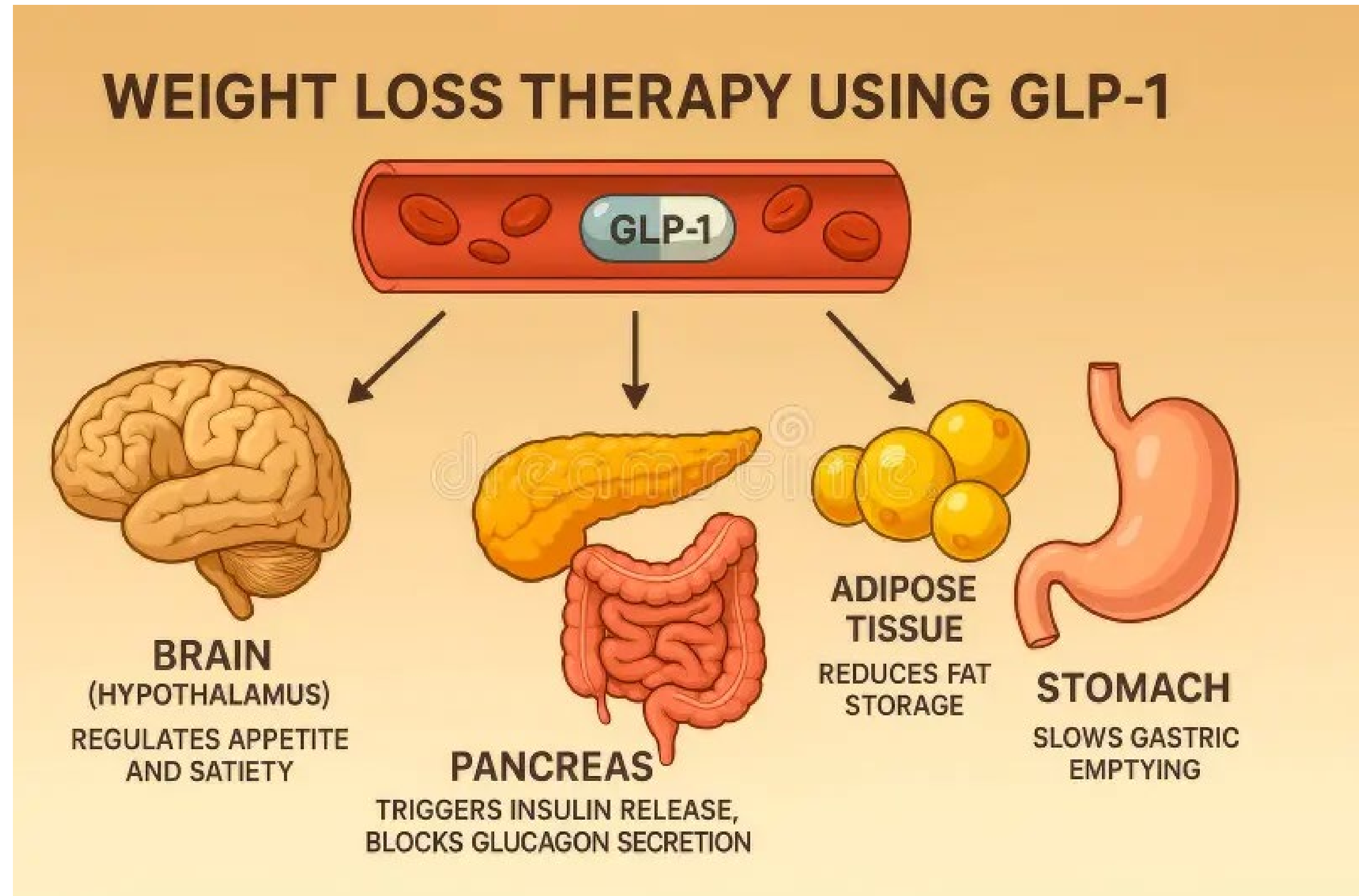
Suppress appetite

Slow gastric emptying

Improve insulin regulation

Improved glucose control

Weight loss mainly from lower calorie intake



# Natural GLP-1 Support

Increase fermentable fiber & Resistant starch

- Gut fermentation → SCFAs → GLP-1 release

Adequate protein 30–40g per meal

- Resistance training

Electrolytes

Probiotics / Motility enhancers

Polyphenols for metabolic flexibility

Sleep/Stress/Inflammation

Post-GLP Plan?



# Case Study 2: Muscle Building Client (Wolverine Stack)

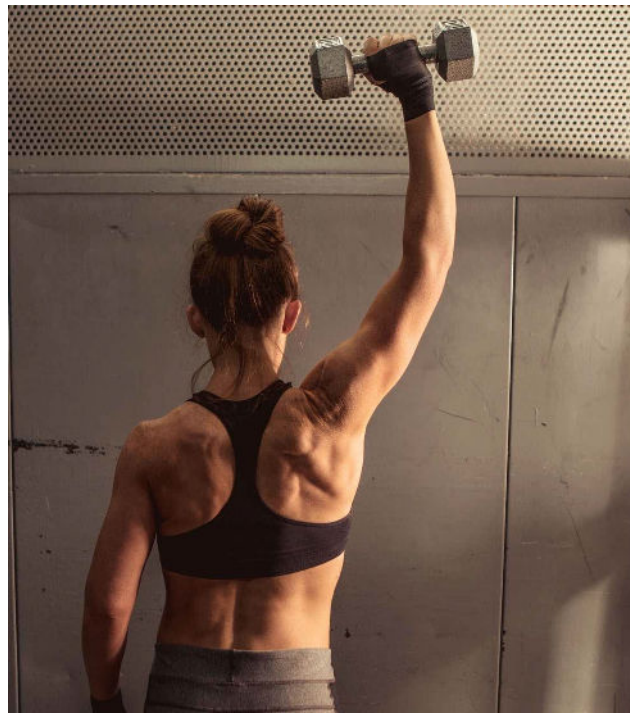
Client: Hugh, 57

Goal: Build muscle and recover faster

Training 5x/week but plateaued

Considering BPC-157, TB-500, GH peptides

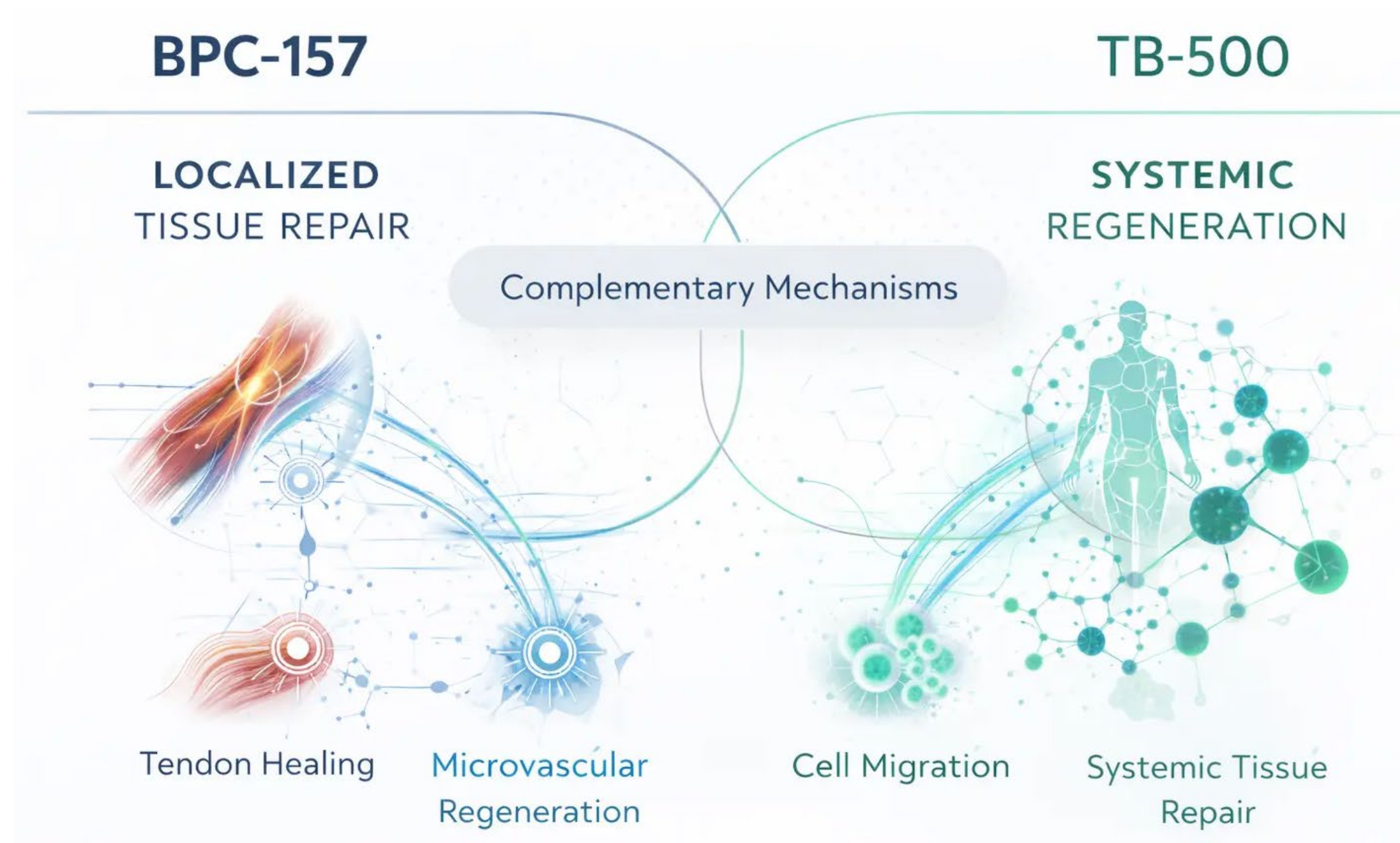
*What about compounded semaglutide & sermorelin?*



# Proposed Mechanism(s)

**BPC-157** (Body Protection Compound): A synthetic peptide based on human stomach proteins, claimed to treat soft tissue damage, tendon-to-bone healing, and reduce gut inflammation.

**TB-500** (Thymosin Beta-4): A synthetic peptide claimed to facilitate cell migration, angiogenesis (blood vessel formation), and tissue repair.



# Muscle Growth / Recovery Strategy

**Protein: 1.8–2.2 g/kg (1-gram per lb BW)**

Whey protein hydrolysate (20-30g during workout)

\*Leucine threshold (3g)

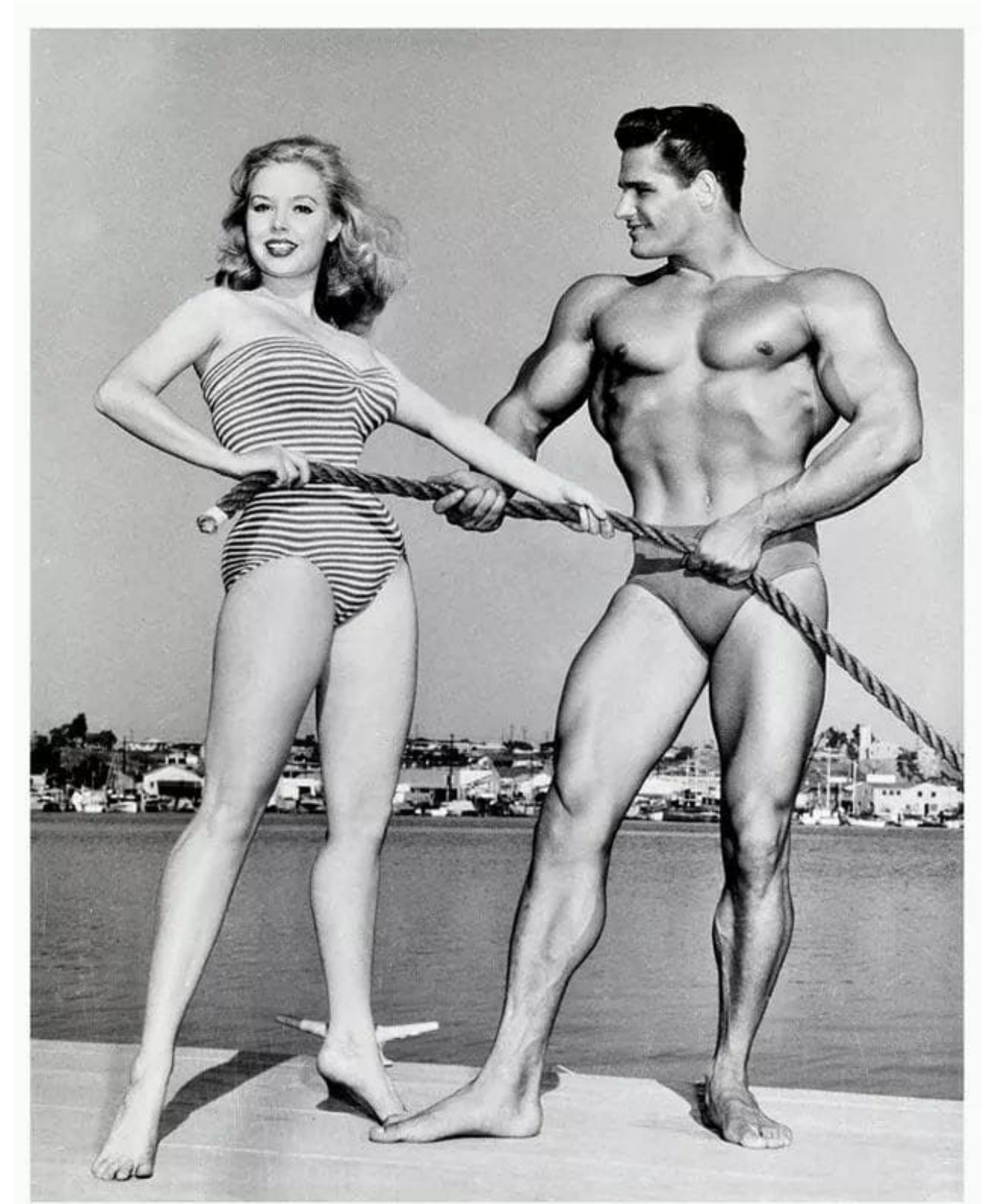
Hydrolyzed Collagen peptides (5-10g; tendon repair)

Omega-3 fatty acids (inflammation)

Magnesium and Sleep optimization (GH support)

Polyphenols support recovery & gut integrity

Micronutrients for tissue repair & metabolism



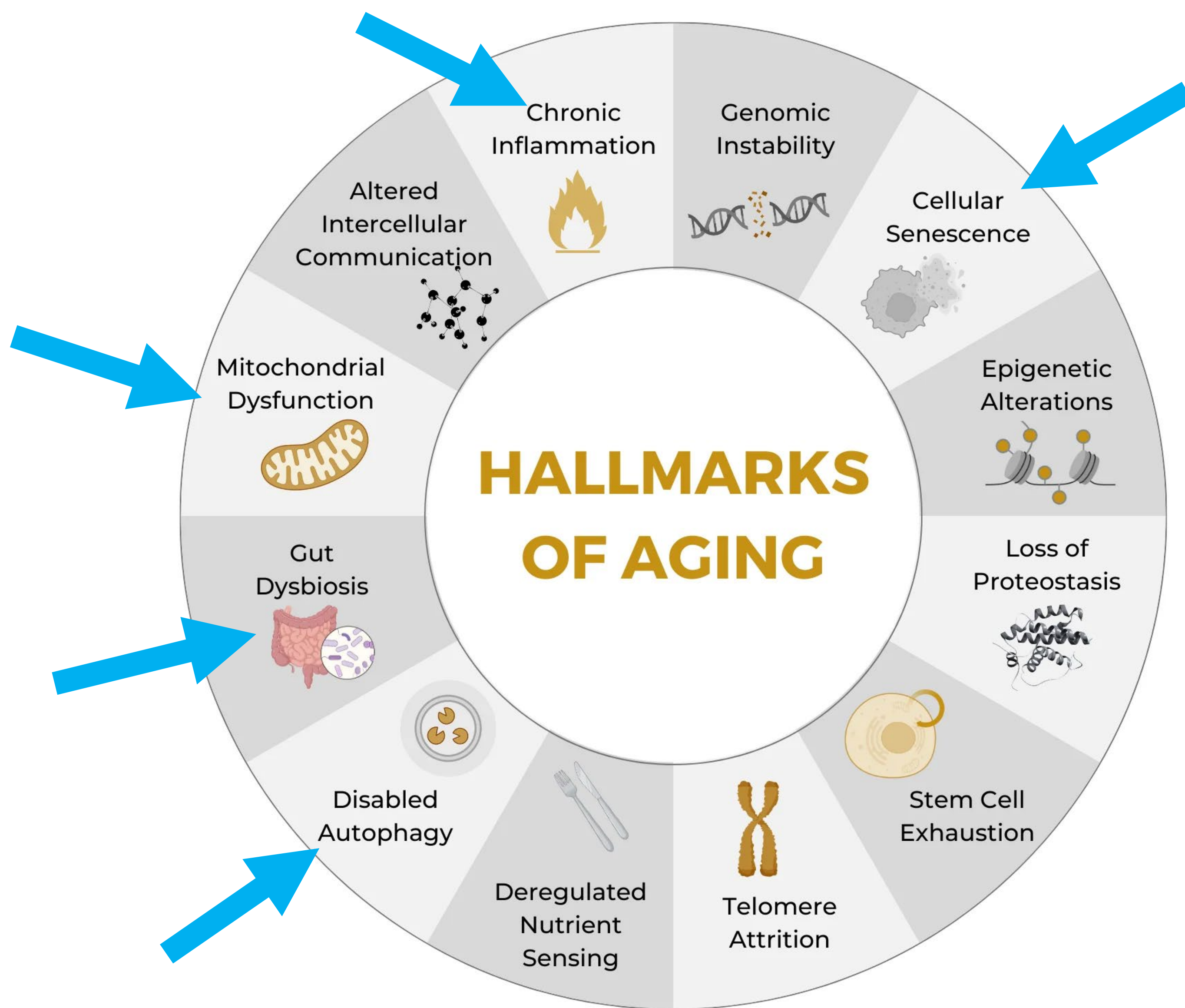
# Case Study 3: Longevity Client

Client: Meryl, 76

Goals: Maintain muscle, cognitive function, longevity

Considering CJC-1295, Ipamorelin, Epithalon





# Longevity Strategy

Exercise activates mitochondrial biogenesis

Polyphenol-rich diet (mitochondrial function)

Protein 1.6–1.8 g/kg (0.75 grams per lb BW)

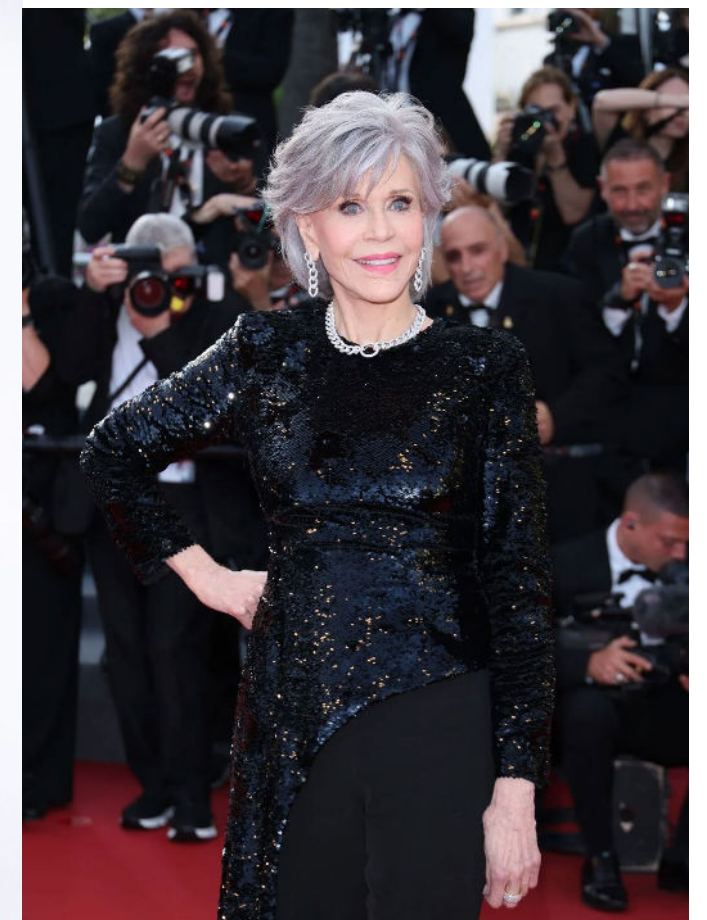
Circadian rhythm and sleep optimization

Omega-3 fatty acids

Stable metabolic health

Time-restricted eating (maybe)

Microbiome diversity



# Key Takeaways

Weight loss, muscle building, and longevity share the same foundations:

- Protein
- Fiber
- Polyphenols
- Movement
- Sleep

Peptides are vital molecular messengers

- Synthetic = quick but narrow
- Natural = sustainable and holistic
- Nutraceuticals + Lifestyle boost endogenous production

Peptides send signals. Nutrition determines whether the body responds.



# The Foundation Still Wins

Peptides may amplify signals.

But food, movement, sleep, and stress determine outcomes.

Holistic nutrition professionals hold the foundation of real health.



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