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Peptide Therapies: Unlock the Power of Regenerative Medicine

“Peptide therapies are only used within the context of the doctor/patient relationship and is based upon patient need. The outcomes discussed below are not representative for all patients. There is a sound and scientific medical basis for the use of these peptides from the peer review medical literature.” - Harlan Bielew, MD, MS.

Disclaimer: This is for educational purposes only. Peptide therapies are only used within the context of the doctor/patient relationship and is based upon the comprehensive needs of each patient. [Dr. Harlan Bielew](#)’s practice at [Healthy Living & Longevity Medical Center](#) incorporates peer review medical literature about peptide therapies. Results from treatment with peptides discussed below are not representative for all patients. Be curious and explore the transformative power of peptide therapies in the paragraphs below.

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Frequently Asked Questions

What are peptides?

Peptides are molecules that consist of between two to fifty amino acid sequence. The first commercial peptide therapy used was insulin (1923) but now is used for hormone optimization, weight loss, sexual enhancement and function, as well as overall healing and repair.

What are peptide therapies?

Fundamentally, peptide therapies give cells the ability to change cell behavior and to handle stress better. *Peptide therapies are natural modulators of cell signaling. The cell changes behavior and can adjust to stress, aging, etc... and can manipulate the genome with signals going from the mitochondria (where energy is made by the cell) to the nucleus through MOTS-C.* There are 7,000 natural peptides in the body. There are countless clinical trials and **FDA-approved peptides in clinical use** . This once burgeoning field of medicine is now fully embraced as an additional mainstay treatment for acute and chronic illness. **Peptides help reclaim the efficiency of receptor sites so they work better (and you won’t need as much hormone to get the effects you seek).**

Peptide therapies have a variety of applications such as immune enhancement; accelerates injury repair to muscles, reverses sarcopenia (loss of muscle), tendons, bones, nerves; progressive fat loss and improved bone mineral density, increase in Testosterone by increasing pulse size and frequency, decrease inflammation in the brain and the rest of the body, natural release of growth hormone,

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improves sleep. **Peptide therapy plus Bio-Identical hormones = Synergy.** It's easiest to think about peptides in these easy to remember ways.

Here is how:

1. Hormone optimization
2. Weight loss
3. Sexual Functioning
4. Healing and Repair.

This means you cannot neglect other aspects of your health including:

- No smoking or forget doing peptides.
- Adequate sleep and rest.
- Only PROTEIN within 30 minutes of taking injections. No fat, or carbs.
- Do periodic fasts.
- Exercise and stretching regularly for best peptide therapy results. (Read more below)

Where do I begin?

You can get started and just use a growth hormone releasing peptide (GHRP), eg, Ipamorelin by itself without spending a lot of money to see if your sleep improves and bone density improves. Use a GHRP together with bio-identical hormones and get great results.

How can I get the most out of peptide therapies?

As mentioned, exercise will help get the best results.

1 hour before: Take supplements like Phosphatidic acid to increase mTOR signaling.

During: Supplement orange juice with L-glutamine, D-Ribose.

1 hour after: Take a supplement with the amino acid Leucine .

Other well-known key amino acids:

Creatine: drives tissue anabolism. Great for older people who lack muscle mass.

Arginine: helps make growth hormone (take with Vitamin C) by suppressing somatostatin secretion. Do not take with exercise. You will not make additional growth hormone.

Glutamine: supports GI mucosal integrity, cellular repair, and healing. Supports growth hormone levels.

Sources of information: A4M lectures and International Peptide Society lectures.

What is the purpose of Peptide Optimization?

The cell has less oxygen consumption, with more ATP produced (cellular energy), and low ROS (reactive oxygen species) generated. Simply put, this gives you more energy. Here are the potential benefits:

1. Hormone Optimization and Growth Hormone Secretagogues: CJC-1295 without DAC, Ipamorelin, Tesamorelin, GHRP-2, GHRP-6

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2. Weight Loss options: GH-191, GHRP, GHRH/GHRP, AOD-9064, Melanotan II, Frag 176-191 (an AOD knockoff, not effective), Thymosin Alpha-1, Cerebrolysin, DSIP, PEPCK, GLP 1R agonist.
3. Sexual Enhancement and Function: Melanotan II and PT-141.
4. Healing and Repair: GHK-Cu, BPC-157, Thymosin Beta-4, AOD +HA, LL-37, GHRH, MGF and PEG-MGF.

How do peptide therapy treatments affect my hormones?

Peptides, as signaling substances, help reclaim efficiency of hormone receptor sites. In other words, if you take some thyroid medicine, eg, T3 (active thyroid hormone), and you don't see improvement in the labs, it may be that the receptor site is not working properly. Peptides and certain other nutrients can help improve the functionality of the receptor so that the hormones we give work as intended.

Importantly, peptide therapy works best in the background of great nutrition, cortisol balance, and the removal of environmental toxins.

The **melanocortin system** includes **Melanotan II** and **Bremelanotide (PT-141)**. **Melanotan II** increases melanogenesis for photoprotection and increased tanning, plays a role in improving autoimmune disease, eg, Lyme disease. Plays a role in sexual dysfunction and can improve libido (increases sexual arousal) and [erectile dysfunction in men](#) (and sexual desire in females) through the CNS, and not through the Cardiovascular System which is the way medicines like Cialis, and Viagra work. Has significant anti-inflammatory disease. Works through the vagal /cholinergic response and affect the immune system. Can affect appetite and cause weight loss. Works well with intermittent fasting. Activation of the vagus nerve leads to cholinergic signaling and inhibits tumor necrosis factor (TNF) and other pro-inflammatory cytokines overproduction (**Cholinergic anti-inflammatory pathway**). This pathway is activated by Melanocortin 3R and 4R receptors. This pathway is critical and is significant in anti-inflammation in the brain. This plays a role in neuroprotection and is also cardioprotective, too. The melanocortin system peptides can be used with **Thymosin alpha-1** to balance Th1 and Th2 issues. This can also be used with **DSIP with Glycine** where you can upregulate glutathione peroxidase and superoxide dismutase. This gives us new approaches to autoimmune diseases. Immune cells have melanocortin receptors 1,3,5. Melanocortin receptor 3,4 is in the brain. Melanocortin receptor 4 plays a role in appetite control. The adrenal cortex is melanocortin 2. Alpha melanin-stimulating hormone reacts with all 5 receptors. Melanotan receptor 1 is on the endothelial cell. **Melanotan 1** does not cross the blood-brain barrier. **Melanotan 2** crosses the blood-brain barrier. **Melanotan 1** will not give you sexual desire effects but will give you tanning and is responsible for melanogenesis. **Melanotan 2** gives you both tanning (sunless tanning) and sexual desire. In [women](#), they can increase pigmentation and more freckles than with men. *Nota bene:* The face and hands may get darker than the rest of the body. The use of **Melanotan 1** is an art, follow the skin pigmentation to determine dosing adjustments. It has the cosmetic effect of tightening the collagen in the face. **Melanotan 1 and Melanotan 2** are effective for autoimmune conditions like Hashimoto's thyroiditis (may also use **Thymosin alpha-1**). Psoriasis may also be treated by **Melanotan 2**, but when treatment is stopped, the disease will come back. **Melanotan 2** works through the vagus nerve through the cholinergic anti-inflammatory pathway. Can be useful for Seasonal Allergy because of the anticholinergic effects. Can be used on a daily, or regular basis vs. **PT-141 (bremelanotide)** which should only be used *twice weekly* to prevent desensitization. **Melanotan 2** is neuroprotective, as well as

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plays a role in decreasing opioid addiction and ethanol consumption. **Melanotan 2** [improves libido and erectile dysfunction in men](#). **Melanotan 2** plays a role in appetite and metabolism.

*****Caveat emptor (Buyer beware)! Swiss Analytic Labs** claims to have tested most if not all peptides advertised on the internet. They say that approximately 80% of these peptides are either adulterated or fake. **Be particularly skeptical of marketing for very inexpensive peptide therapies. It simply is impossible for reputable companies to manufacture these products and make money at very low prices. *****

Common Peptide Therapies

AOD 9064 stands for Anti-Obesity Drug and is a peptide fragment found within Growth Hormone (the last 15 amino acids), that is responsible for the substantial weight loss effects that are seen when using Growth Hormone. Growth Hormone causes weight loss of both visceral (deep) fat and retroperitoneal fat, whereas Testosterone and exercise are responsible for the superficial fat loss. Affects lipid metabolism (women greater than men). Best for weight loss of 20-30 pounds. Promotes chondrocyte production of collagen and proteoglycan. Enhances hyaluronic acid. The success rate for weight loss improved with work-outs or fasting. It also helps prevent fat build up and increases the NAD⁺/NADH ratio, great for the cells and for stem cell renewal. It is best used for weight loss in combination with a **Growth Hormone Releasing Hormone (GHRH)**, and a **Growth Hormone Releasing Peptide (GHRP)**. **AOD with HA** (hyaluronic acid) useful for cartilage regeneration in knee, hip, shoulder, ankle, and tendinopathies. **AOD with HA-** also good for trigger point injections. Examples of **GHRH's** include Sermorelin, GRF 1-29, **modified GRF 1-29 (CJC-1295 without DAC)** (makes the pituitary follow the natural pulsatile release to increase **Growth Hormone**, promotes muscle growth and fat burning and may help with sleep), **CJC-1295 with DAC** (the DAC-drug affinity complex- increases the half-life of the product by several days and elevates Growth Hormone and IgF1 levels after a single administration), **Tesamorelin**. Examples of **GHRP's** include **GHRP-2** (reduces atrophy in muscle, potent stimulator of **Growth Hormone** secretion, with minimal stimulation of **Prolactin** and **Cortisol**, increases growth velocity in children, and improves appetite with weight gain in patients with anorexia), **GHRP-6** (actively increases ghrelin in the stomach, restores Growth Hormone secretion in obesity, and improves phase 2 sleep), **Ipamorelin** (plays a role in nitrogen retention, the mildest of the group and with large doses does not produce prolactin or cortisol elevations, but does give a large release of **Growth Hormone** without desensitization side effects), and **Hexarelin** (has cardioprotective effects, and the strongest of the group, and gives the biggest pulse of **Growth Hormone**, but there may be an elevation of prolactin and cortisol transiently, and desensitization can occur regardless of dose so use sparingly). **MK-0677** is fraught with side effects such as involution of receptor sites in the brain and irreversible neurologic damage. It also elevates cortisol and increases depression and anxiety.

The **GHRH's** regulate **Growth Hormone** production and release, the neurochemical regulation of sleep, and much more. The **GHRP's** antagonize the release of **Somatostatin**, and enhances the release of **GHRH** and increases **Growth Hormone** release. The **GHRP's** also have stress protective benefits, anti-anxiety & anti-depression effects and can stimulate to the production of **Nitric Oxide (NO)** from endothelial cells. Also has muscle repair function and anti-inflammatory effects.

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BPC-157 (Body Protection Compound-157) by itself does nothing which makes it very safe to use at recommended doses. It has no side effects, no toxicity, and no drug interactions. It helps the body to achieve homeostasis. *It is a powerful cell signaling messenger* that decreases inflammation and accelerate healing (muscle, brain, bone, tendon, nerve, ligament, cornea, intestines, as examples). It increases fat loss, improved immune function, well being, and bone mineral density. Some patients claim that their chronic pain has been substantially reduced. BPC-157 can help you heal faster from injury to bone, muscle, ligament, tendon, nerve, brain, teeth, intestine, cornea via cell signaling. This peptide responds specifically to injury. It also has an influence on neurotransmitters related to stress, anxiety, mood, and behavior via its effects on the serotonergic, dopaminergic, GABAergic and opioid systems. May help with depression. It has effects on the GI tract via its anti-ulcer, cytoprotective effects. It improves GI mucosal integrity (anecdotal info for healing leaky gut 500mcg, orally, twice daily). It improves nitric oxide (NO). Useful in weaning patients off Proton Pump Inhibitors (PPI's) with zinc carnosine over a period of a month. Induces F-actin formation. Can be used after initial use of steroids for acute anti-inflammatory purposes thus prevents the long-term adverse effects of steroid use. Decreases neuroinflammation. *Ameliorates alcohol and opioid withdrawal symptoms (may be combined with DSIP)*, and opposes alcohol intoxication. Helps with homeostasis of dopaminergic and serotonergic systems. Improves nerve (axonal and myelin sheath) regeneration. It rapidly and permanently counteracts QTc prolongation of the heart caused by neuroleptic medicines (Haldol, etc) and prokinetics. Intranasal use for Lyme and Mold brain fog.

Cerebrolysin is a neuro-regenerative and neuroprotective peptide. It has neurotrophic repair properties similar to Nerve Growth Factor (NGF) and Brain-Derived Nerve Growth Factor (BDNF). It is a low molecular weight peptide that can cross the blood-brain barrier. Can be used for Traumatic Brain Injury (TBI) and Ocular Migraine Headaches, TIA's, Stroke, Post Stroke Recovery, and Mood Dysregulation. It can be used to increase memory and learning and can improve synaptic function and synaptic density. Protects nerves from free radicals and oxidative stress damage and improves the metabolic activity of neurons, and protects neurons from neurotoxic effects of glutamate. Improves synaptic functioning. *Enhances cognitive function, memory, learning, creativity, and motivation.* It can cross the blood-brain barrier and decreases beta-amyloid formation and deposition as well as Tau protein phosphorylation. It has a positive effect on behavior and neurotrophic stimulation. It can also be used for mood dysregulation, traumatic brain injury (TBI), concussion, stroke, trans-ischemic attacks (TIA), Alzheimer's disease. In dementia, improves neuronal cytoarchitecture which results in improved cognitive and behavioral performance. Consider doing a trial in those with Apo E 4 (3/4, or 4/4) with cognitive impairment. This can help mitigate the continued cognitive impairment. *Significant improvement was seen in those with mild to moderate dementia.*

Deep (or Delta) Sleep Inducing Peptide (DSIP) This peptide not only helps regulate sleep by way of improving the circadian function of sleep (mostly stage 4, slow wave sleep, when growth hormone is released) and decreasing wake ups throughout the night. It is not a sedative drug. It is also neuroprotective (prevents neuronal death) prevents excitotoxicity, and increases glutathione peroxidase and Superoxide dismutase (SOD) in the brain which increases oxidative phosphorylation in the brain, and hence, improves mitochondrial function and LH release which can boost Testosterone levels by 100-200 points. There are no significant side effects from treatment. Oxidative stress in the brain causes

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an age-associated decrease in Testosterone. DSIP improves this process in the brain, where it can also help lower feelings of stress by lowering ACTH. This peptide has also been shown to decrease alcohol and opioid withdrawal (and decreases chronic pain). It has a growth hormone releasing response in a physiologic way.

Epithalon literature is mostly from Ukraine and Russia. It regulates the cell cycle to upregulate polymerase activity. The peptide is from the pineal gland, improves the sensitivity of the hypothalamus, and normalizes the function of the anterior pituitary. It is an anti-aging peptide for short-term use (up to 10 days a year or twice a year). 33% increase in telomere length by inducing telomerase activation and elongation and also prevents chromosome fusion. It is able to overcome the Hayflick limit of cell divisions (by 10 more divisions). Human studies for 12 years, showed decreased mortality by 28%, and a two-fold decrease in cardiovascular mortality. It also has tumor suppression activities. Epithalon combined with **Thymalin** over a 6 year period decreased the mortality rate 4.1 times that of the control group. In human elderly studies, Epithalon has been shown to increase SOD and Glutathione peroxidase (just like **DSIP**, and **Kisspeptin**), complete normalization of antioxidant indices, reduction of lipid peroxide oxidation products, improved melatonin and immunity (both cellular and humoral). Other studies in the elderly showed: increased glucose utilization, increased insulin sensitivity, increased HDL, lowered LDL, lower BP with decreased peripheral resistance, and improved tissue repair. In other human cancer trials: restored cellular immunity, and decreased recurrence and metastasis for 10 years. In breast cancer, patients showed partial or complete tumor regression, improved leukopenia and immune function, and prolonged patient lives.

GHK-Cu (GHK-copper) modulates copper into cells. Can accelerate change from inflammation to a healing phase via decreasing TNF alpha and beta, and decreasing IL-6. It increases SOD (copper and zinc-dependent) and that leads to a decrease in Reactive Oxygen Species (ROS). Decreases ulcers and infections. Decreases fibrinogen and metastasis of cancer. Increases myelin and cell regeneration and increase nerve density. Plays a role in cosmesis and also has been shown to boost self-confidence.

IGF-1 (Insulin-like Growth Factor 1), aka, Somatomedin C. It's very similar to insulin. In the brain, it plays a role in neural development and myelination. It is anti-inflammatory. In the heart, it has vasodilatory effects. In muscle, plays a role in muscle development and helps rebuild muscle in a more efficient way. It mediates the effects of Human Growth Hormone. It improves muscle, bone and cartilage tissue. It helps improve connective tissue healing. It plays a role in adipocyte differentiation and regulation. It improves the anti-oxidant defense system. Utility: Conditions needing soft tissue enhancement- muscle, tendon, ligament repair from sports injuries. Looks for specific results over short periods of time. It doesn't stop the amount of scar tissue made, however (use with TB-4, which decreases scarring). Useful for Diabetes I and Insulin Resistance. It improves insulin sensitivity. Useful for weight loss and metabolic syndrome. Improves bone density. Decreases neural-inflammation. Low level is associated with CV events and increased mortality rate. It can play a role in those susceptible to cancer so use for short-term, specific uses. High levels are associated with cancer risks (breast - premenopausal-, prostate, colorectal). We are trying to use it in physiological levels only for best results.

Ipamorelin is a Growth Hormone Releasing Peptide (GHRP), anti-depressant, anti-anxiety, protective of stress, potentially neurologically protective.

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Kisspeptin 10 was developed in Hershey, PA. (home of the Hershey kiss). This peptide increases [Testosterone for men](#) with primary hypogonadism and men who lose Testosterone from the aging process. This peptide works by increasing the pulse frequency and pulse size of LH. Testosterone levels may rise 100-250 points. Kisspeptin 10 has also been shown to be better than HCG for increasing testicular size. There is no feedback inhibition. There is physiologic Growth Hormone release, too. **LL-37** is an antimicrobial peptide classified as a Cathelicidin and is involved with our innate immune system of defense against bacterial invasion, antiviral and antifungal activity on mucous membranes, increases epithelial stiffness and decreases permeability to bacterial invasion; can improve treatment of Cystic Fibrosis. Also, improve treatment for Respiratory Syncytial Virus (RSV) and Influenza A via damaging viral envelope and disruption of viral particles. Has antifibrotic effects and *inhibits* pro-inflammatory responses of NF kappa beta from LPS (via decrease TNF alpha, and IL-6). Interestingly, it decreases gut permeability via improved tight junctions (claudin, occludins). Can help protect against pathogen-mediated intestinal inflammation. Powerful anti-microbial and anti-inflammatory. Useful in Crohn's and Ulcerative Colitis. In the Diabetic gut, it improves tight junctions and microflora. With *C. difficile*, it can decrease inflammation (IL-6).

MGF (mechanical-growth factor) is a peptide in development. It is an *isoform of IGF-1 called IGF-1Ec*. It is produced locally. It is activated in the heart and the brain by *ischemia* to activate mRNA coding for the isoform IGF1-Ec. This acts locally to increase anabolism, increase stem cell pool, stimulates satellite cells to make new cells, not grow them as skeletal muscle fibers are unable to divide. **MGF** expression is significantly increased following mechanical stimuli to muscle, bone, and tendon. Resistance exercise and skeletal muscle stretch/overload, both contribute to increases in IGF-1Ec. In response to stretching and damage to muscle, **MGF** is vital for protein synthesis, mRNA transcription, and activation and proliferation of satellite cells. Satellite cells are signaled to replicate by **MGF**. Satellite cells are prevented from going forward until they fuse with muscle fibers and when they adopt a myogenic program. It's rapid induction followed by fall of in a couple of days in response to stretching or damage to the muscle, or by ischemia in the brain or heart. This works as a proliferator of cells. This works in concert with **Growth Hormone**. **MGF** promotes endothelial cell growth. **MGF** has been shown to improve cardiac function post-MI (myocardial infarction commonly know as a heart attack). It prevents a decrease in left ventricular ejection fraction, reduces post-infarct expansion by inhibiting post-infarct apoptosis (cell death). Helps with the development and repair of neurons. It decreases oxidative stress in the brain as well as NMDA-expressed excitotoxicity. It is also expressed in osteoblasts in response to mechanical stress. **MGF** reverses sarcopenia. Applications are seen in conditions needing anabolic enhancement, soft tissue repair of ligaments, tendons, muscles from injury; muscle growth; cardiac ischemia problems, brain neuroprotection/ ischemia; age-related sarcopenia. **MGF** and all **IGF's** decline with aging. **PEG-MGF** is pegylation of **MGF** and is a peptide in development. It is an attachment of polyethylene glycol to the peptide. The pegylation process acts as a protective coating and stabilizes the **MGF** molecule. It protects the **MGF** molecule from enzymatic and receptor inhibition and increases **PEG-MGF** half-life to several days (48-72 hours). **PEG-MGF** is useful in muscle repair or hypertrophy (specific training). The **PEG** is inert and doesn't bind to other substances in the body and has rapid urinary excretion. For effects upon muscle, use **MGF 600 mcg** injected SQ to muscles three times a week to increase proliferation of muscle. The day after the workout you may wish to use **IGF1-LR3** (100 mcg/ three times a week) that works on the recovery state of

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muscle. Stay below 2mg total per week. Don't use for more than 10 days consecutively and be cautious with hypoglycemia.

Melanotan II is a melanocortin. It works through the brain/ CNS where it causes tanning and naturally makes a woman and a man sexually aroused. [Improves libido and erectile dysfunction in men](#). Caution: may raise blood pressure and may lead to priapism (sustained erection for over an hour) with high doses, and may cause GI upset which may be prevented by coffee, or Xantac.

PT-141 (Bremelanotide) is a melanocortin receptor agonist. Has a high affinity for melanocortin 4 receptors. Improves [sexual experiences](#) for [men](#) and for [women](#). Improves female sexual dysfunction and erectile dysfunction in males. It acts on the CNS and elicits a more desirous sexual response. GI effects are not as pronounced as with **Melanotan 2**, but it has been shown that if you do experience nausea, you can use Xantac 150mg, or drink a cup of coffee prophylactically to prevent nausea, or use a lower starting dose prevents nausea. They can also develop some freckles (reversible), even though they are not supposed to become tan with this product (more pronounced in women). Caution: may raise blood pressure, and cause tachycardia, and may cause GI upset.

PEPCK stands for phosphoenolpyruvate carboxykinase. It is an enzyme used in the Krebs Cycle that converts OAA to PEP. It is involved in the production of gluconeogenesis in the liver and brown and white fat. It plays a role in fat loss, improved performance, and endurance. If you are trying to improve performance, you are going to have to improve and adjust lactate threshold and **PEPCK** helps do this. **PEPCK** provides a mechanism to control lactate. If you are going to improve the NAD⁺/NADH ratio of the cell, you are going to increase the efficiency of the cell. **PEPCK**, fasting, ketone esters, **GHRH's** and **GHRP's** also improves the NAD⁺/NADH ratio. This ratio is the ultimate efficiency to evaluate cell function. **PEPCK** increases glycogen in muscles, decreases muscle fatigue, and increases lactate threshold.

N-Acetyl Semax is a fragment from **ACTH**. It is not a melanocortin. It is neuroprotective and inhibits histamine release (through its Proline-Glycine-Proline ending sequence). It also reduces vascular permeability. Nasal spray or SQ. It elevates BDNF in the hippocampus and in the cerebral cortex. It acts as an antidepressant and anxiolytic and attenuates chronic stress. It is a potential melanocortin antagonist (3 and 4 receptors). Other medical uses: Stroke, TIA, Memory, Cognitive Disorders, Boosts Immune System, Peptic Ulcers, Optic Nerve issues. Acts as a brain anti-oxidant. It counteracts the inhibition of learning and memory occurring from toxic heavy metals and counteracts neurotoxic effects. It promotes the survival of neurons secondary to hypoxemia and glutamate neurotoxicity. It contributes to mitochondria stability when under stress. It increases the amount and mobility of immune cells. It can be alternated or mixed with **Selank**.

Selank shows a variety of effects such as decreased histamine response from mast cells, decreased vascular permeability, ulcer control meaning increased ulcer healing (from alcohol or stress), allows you to relax and concentrate, helps modulate IL-6, increases brain-derived nerve growth factor (BDNF) in the hippocampus, increases neuroplasticity and stem cell differentiation, has anti-depressant, anxiolytic effects that come on quickly, useful for Generalized Anxiety Disorder (GAD) and shows no sedation/addiction/cognitive loss. has anti-viral activity, regulates inflammation and decreases tumors in

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breast cancer, helps balance the sleep-wake cycle. Useful to transition from Growth Hormone to using a GHRH/GHRP as it decreases anxiety.

Tesamorelin is a growth hormone releasing hormone (GHRH). It stimulates the release of growth hormone and increases the amplitude of the pulse. It is a fragile peptide so it needs to be refrigerated after being reconstituted and used immediately. Tesamorelin is a good peptide to use if you transition from the use of **Growth Hormone** to a GHRH (best used with a GHRP, such as Ipamorelin). It has been successfully used to treat HIV + lipodystrophy, as well as to increase lipid metabolism, improve vascular health, control inflammation, and more.

Thymosin alpha-1 modulates innate immunity boosting Natural Killer cells, **and that means it autocorrects the immune system.** If you get sore throats and colds multiple times each year, this peptide can help you. This peptide can be used for autoimmune issues in general. It stimulates T cell production, decreases the production of pro-inflammatory cytokines, Improves Th1 response, balances Th1/Th2. It dampens immunity (by upregulating IL-10). Enhances dendritic cells, and antibody responses. It has anti-tumor effects and decreases oxidative damage. It improves tolerance to stress. It increases anti-oxidant and glutathione production. It improves microcirculation as well as tissue repair and healing. Inhibits viral replication. Applications: improves autoimmune disease, chemical sensitivity, allergies, cancers, Hepatitis B and C, HIV/AIDS, Malignant Melanoma, and other (particularly stressful situations, eg, air travel, that bring out Shingles, and Seasonal Allergy). Also, Lyme disease, Chronic Fatigue, Fibromyalgia. Adjuvant to Flu vaccinations in Geriatrics, sepsis, Dysbiosis (along with BPC-157). Best use for Hashimoto's Thyroiditis is to use daily to lower antibodies (600 mcg/day) instead of every 3 days as used for other conditions. Works well to decrease brain fog of chemo patient (along with BPC-157, and DSIP). There are no documented adverse effects to date (10/20/18).

Thymosin beta4 (TB4) addresses inflammation, immune dysregulation, and reactive oxygen species that underlie chronic illness and age-related decline. Promotes healing via upregulation of G-actin formation. Increases cells involved in healing. Improves cell migration to the site of injury. It decreases scar tissue fibrosis (reduces levels of myofibroblasts). Anti-inflammatory. Promotes angiogenesis and differentiation of endothelial cells. Increases collagen deposition, and is cytoprotective. Improves hair growth. Useful for stroke, and traumatic brain injury (TBI) when used with **BPC-157**. Also supports immunity and is neuroprotective. Useful for soft tissue repair: tendons, ligaments, muscles, also post-infarction of the myocardium and decreases sarcopenia. Applications for venous ulcers, and ischemic strokes. Cardioprotective, and useful in Non-Alcoholic Fatty Liver Disease (NAFLD) by decreasing hepatic fibrosis and decreases proinflammatory factors and oxidative stress. Can be used with **BPC-157**. Prevents adhesions & fibrous band formation in injured tissue. Protects and restores neurons post-TBI. Works like **BPC-157** in that it is a cell-to-cell signaling molecule. Used for patients with sepsis in ICU's.

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Patient Resources

New Patients:

1. Call our office [\(561\) 842-7422](tel:5618427422)
2. Fill out the relevant forms for [Men or Women](#) and have forms for [Adrenal Fatigue, Defining Your Deficiencies, Sexual Enhancement/Oxytocin, Heavy Metals & Mold](#)
3. Email copies of your forms and any lab work completed in the past year, as well as anything you deem important. Please also print and bring to your consultation.
4. Schedule an initial 90 minute consultation to meet with us at our office Healthy Living & Longevity Medical Center (11380 Prosperity Farms Road, #114, Palm Beach Gardens, FL 33410-3646)

Existing Patients: Once we've met with you, patients regularly schedule follow up consultations as needed. It is our privilege to partner with you on your journey to wellness.

Further Reading:

- Peptide Therapies: <https://www.hllmc.com/peptide-therapies>
- Men's Health: <https://www.hllmc.com/solutions-for-men>
- Women's Health: <https://www.hllmc.com/solutions-for-women>
- Children's Health: <https://www.hllmc.com/solutions-for-children>
- Chronic Stress and Fatigue: <https://www.hllmc.com/chronic-stress>
- Black Mold and Mycotoxins: <https://www.hllmc.com/mold-mycotoxin-testing>
- Bioidentical Hormones: <https://www.hllmc.com/bioidentical-hormone-replacement-therapy>
- Gene Testing: <https://www.hllmc.com/gene-testing-other-testing>
- Peptide Therapies: <https://www.hllmc.com/peptide-therapies>
- Preconception Medicine: <https://www.hllmc.com/preconception-medicine>
- Mental Health: <https://www.hllmc.com/psychological-and-psychiatric-issues>
- Sexual Health: <https://www.hllmc.com/sexual-enhancement>
- Weight Loss: <https://www.hllmc.com/weightloss>

Notice of Office Policies and Procedures

Unfortunately many insurance companies do not pay for preventive procedures or reversal of disease. This means that Dr. Bielely is a fee for service physician and does not accept insurance. Dr. Bielely has opted out of Medicare. A receipt shall be provided to you upon request with diagnosis and treatment codes which may be submitted to your insurance company. Lab testing is usually covered by Medicare and many insurance policies (consult your policy)