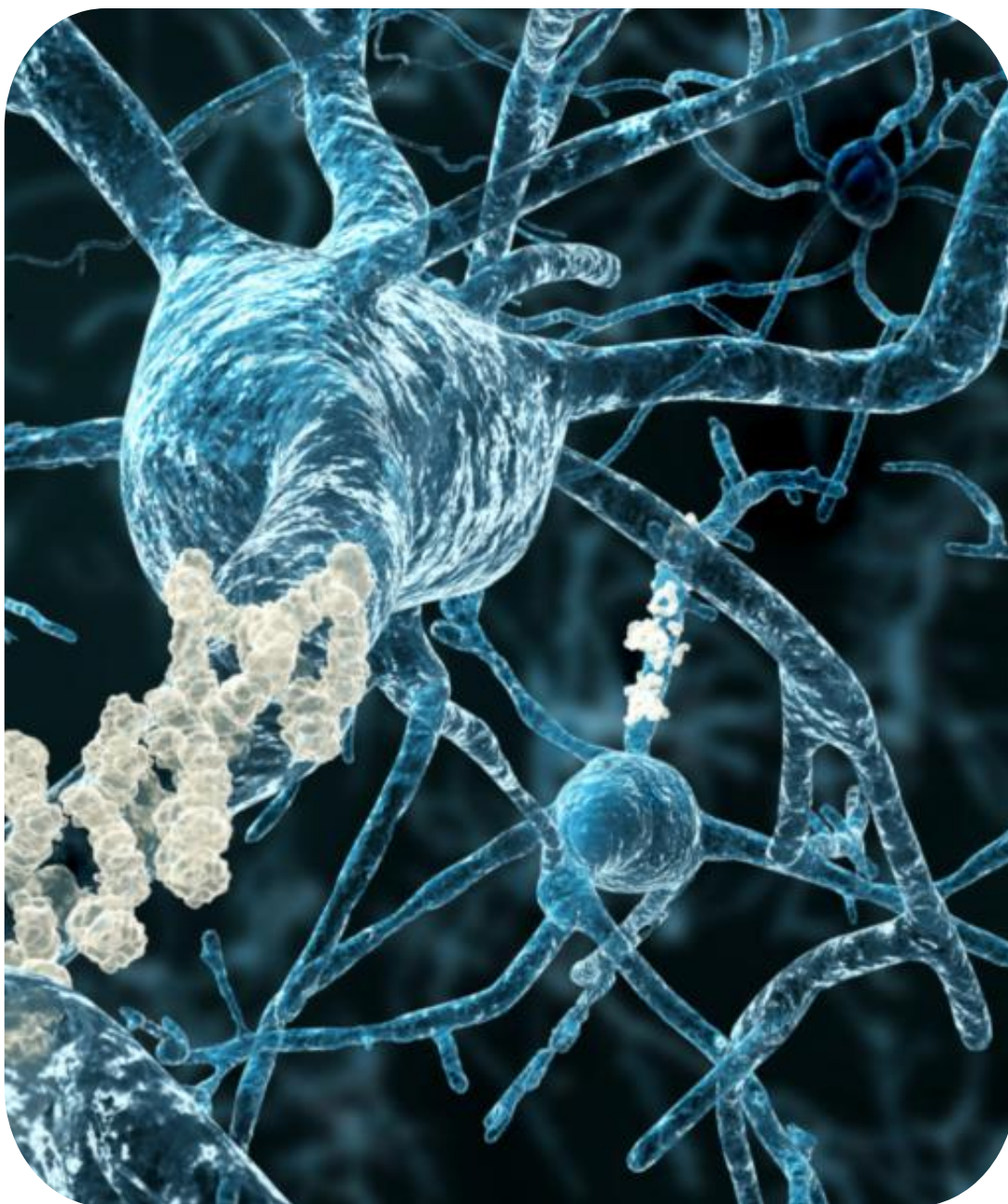




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A Comprehensive Guide to Peptide Therapy



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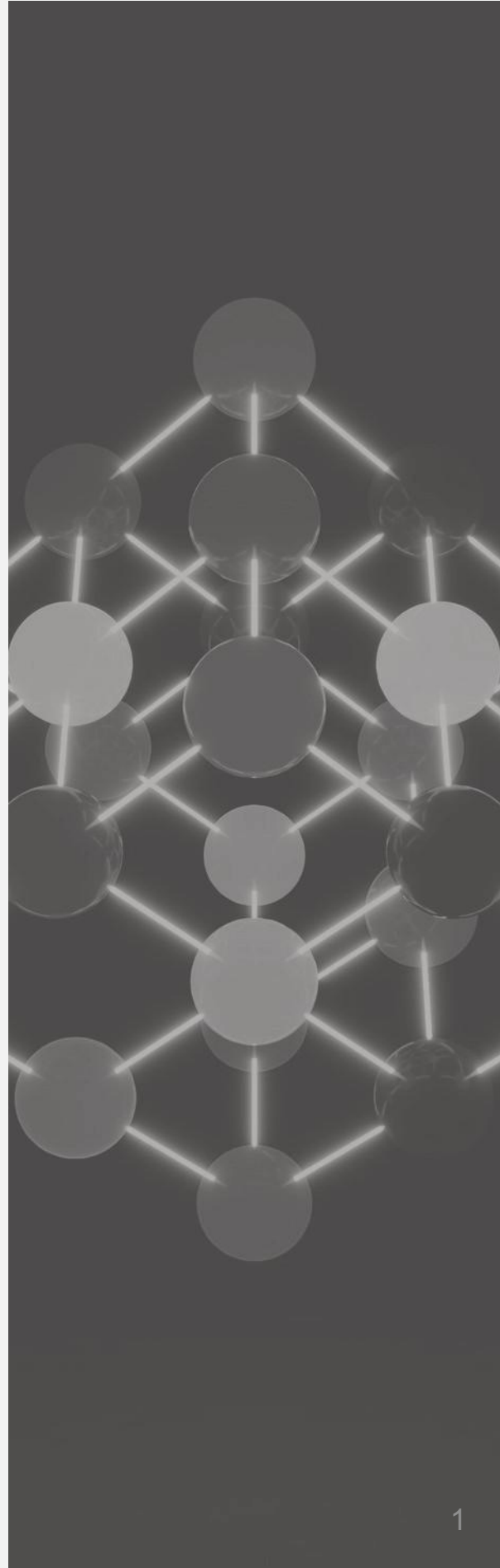
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Introduction: What are Peptides?

Peptides are naturally occurring amino acids that play important roles in many of the body's processes, such as hormone regulation, immune function, and tissue repair. Peptide therapy is a medical treatment that targets specific biological processes in the body. By delivering peptides directly to the body, we are able to address a variety of health concerns ranging from anti-aging and weight loss to immune system support.

Peptides have diverse healing capabilities that stem from the specific amino acids they contain. Acting as powerful messengers, they transmit signals to cells and tissues, prompting a wide array of vital biological functions. Given that each peptide targets distinct cells and functions, they can be combined and tailored to enhance your overall health and wellness.

Balanced Bodies is at the forefront of peptide therapy, using the latest research and technology to provide customized treatments that improve health and wellness. Our team of experienced healthcare professionals stays up-to-date with the latest advancements in peptide therapy to ensure each of our clients receives the highest quality of care.



Benefits of Peptide Therapy



Peptide therapy offers a range of potential benefits. Targeted, individualized therapies can help to regulate hormone levels, boost immune function, increase energy and focus, improve sleep quality, and promote overall health and wellness.

- Anti-Aging
- Weight Loss
- Injury Repair
- Promote Brain Health
- Improve Sleep
- Immunity

Anti-Aging

Peptide therapy offers numerous benefits for combating the signs of aging. Copper-binding peptide, GHK-Cu, has gained popularity in anti-aging medicine for its ability to stimulate the body's natural production of collagen. Collagen is a protein that is essential for maintaining healthy skin, hair, and nails. As we age, our bodies produce less collagen, leading to the development of wrinkles, fine lines, and other signs of aging.

Copper-binding peptides also help to improve skin texture, elasticity and tone and have been shown to reduce the appearance of fine lines and wrinkles. This can help to restore a more youthful appearance to the skin, and may even delay the onset of future signs of aging.

Finally, these peptides may be beneficial in increasing hair growth. Peptides can help to stimulate the hair follicles, promoting new hair growth, improving hair thickness and density, and reducing hair loss.

References:

Pickart L, Margolina A. Regenerative and Protective Actions of the GHK-Cu Peptide in the Light of the New Gene Data. *Int J Mol Sci.* Jul 7;19(7):1987. doi: 10.3390/ijms19071987. PMID: 29986520; PMCID: PMC6073405.

Pickart, Loren & Vasquez-Soltero, Jessica & Margolina, Anna. (2015). GHK Peptide as a Natural Modulator Multiple Cellular Pathways in Skin Regeneration. *BioMed Research International*



GHK-Cu For Skin and Hair

Human copper-binding peptide, GHK-Cu, is a small, naturally occurring peptide present in human blood plasma. For this reason, GHK-Cu is currently widely used in skin and hair products.

GHK-Cu may improve overall appearance by:

- Tightening loose skin.
- Reversing thinning of aged skin.
- Improving skin firmness, elasticity, and clarity
- Reducing fine lines and depth of wrinkles.
- Reducing appearance of skin damage caused by the sun and normal aging.
- Protecting skin cells from effects of UV radiation from the sun.
- Increasing hair growth and thickness.
- Increasing hair follicle size.

References:

Pickart L, Margolina A. Regenerative and Protective Actions of the GHK-Cu Peptide in the Light of the New Gene Data. *Int J Mol Sci.* Jul 7;19(7):1987. doi: 10.3390/ijms19071987. PMID: 29986520; PMCID: PMC6073405.



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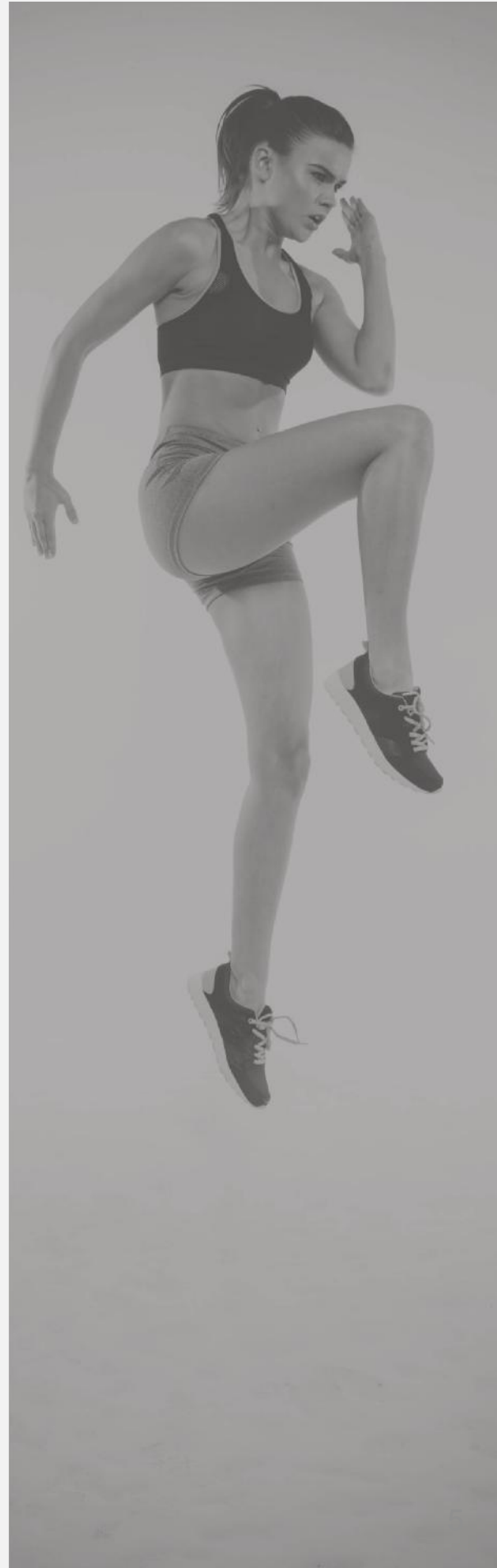
Growth Hormone Peptides

Peptide therapy can play an important role in reducing fatigue and improving energy levels. Certain peptides are able to enhance the body's natural ability to produce Human growth hormone (HGH) which plays a crucial role in various bodily systems. Sadly, HGH levels start decreasing around age 30, and this decline continues over time. As a result, energy levels, youthful appearance, and fitness gradually diminish, making a person feel and look older. Fortunately, there are ways to restore the youthful levels of HGH in the body using peptide therapy. Here are some other ways in which peptides may help to boost energy:

1. Increasing oxygen delivery to tissues through increasing the production of red blood cells.
2. Improving muscle function.
3. Increasing energy production.
4. Reducing inflammation.

Overall, peptides have the potential to reduce fatigue by enhancing natural production of human growth hormone and improving oxygen delivery, muscle function, and reducing inflammation.

Falutz, Julian & Allas, Soraya & Mamputu, Jean-Claude & Potvin, Diane & Kotler, Donald & Somero, Michael & Berger, Daniel & Brown, Stephen & Richmond, Gary & Fessel, Jeffrey & Turner, Ralph & Grinspoon, Steven. (2008). Long-term safety and effects of tesamorelin, a growth hormone-releasing factor analogue, in with abdominal fat accumulation. *AIDS* (London, England). 22. 1719-28.



Growth Hormone Boosters

Peptides that promote pituitary health and stimulate natural production of Human Growth Hormone (HGH):

- Semorelin (Injection)
- Ipamorelin+CJC 1295 (Injection)
- Tesamorelin (Injection)
- Ibutamoren MK-677 (Oral)

Benefits of HGH boosting peptides may include:

- Improved levels of energy and stamina.
- Enhanced cardiovascular performance.
- Improved workout performance and recovery.
- Increased lean muscle mass.
- Reduced body fat.
- Enhanced sleep quality.
- Increased bone mineralization and density.
- Improved appearance of skin.

Reference:

Nass, Ralf et al. "Effects of an oral ghrelin mimetic on body composition and clinical outcomes in healthy older adults: a randomized trial." *Annals of internal medicine* vol. 149,9 (2008): 601-11



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Weight Loss

Peptide therapy is a popular weight loss solution that has shown to help people lose weight when diet and exercise alone aren't enough. A personalized treatment can be tailored to meet each person's specific weight loss needs.

Two peptides, Semaglutide and Tirzepitide, have shown great promise in recent years. These injectable peptides are taken once a week and have been approved by the FDA for treatment of type 2 diabetes.

Semaglutide

Semaglutide is a peptide that is very similar to a natural hormone in our bodies called glucagon-like peptide-1 (GLP-1). Semaglutide works by stimulating the release of insulin and reducing the production of a hormone called glucagon, which helps to control blood sugar levels. One of the main ways that semaglutide helps with weight loss is by affecting our eating habits. It interferes with our food preferences, reduces our appetite, and increases feelings of fullness after eating. It doesn't have much impact on our energy expenditure (how many calories we burn) or the rate at which our stomach empties its contents.



Weight Loss

Tirzepatide

Tirzepatide is a synthetic peptide made up of 39 amino acids and is designed based on a natural hormone called GIP. It works in the body by targeting two receptors, GIP and GLP-1, which are involved in regulating blood sugar levels. When GIP and GLP-1 are administered together, they have a greater impact in reducing body weight, food intake, and fat mass compared to when either of them is used alone.

AOD9604

AOD-9604 is a peptide taken daily, either by mouth or injection, that when combined with a healthy diet and exercise, helps reduce body fat more effectively. It stimulates the pituitary gland, which controls fat metabolism, mimicking the actions of natural growth hormone. This prevents the body from turning non-fatty foods into fat and promotes the use of stored energy during fasting or exercise. AOD-9604 targets visceral fat, the fat around our organs, without affecting blood sugar levels. It also has regenerative properties similar to growth hormone.

JJung HN, Jung CH. The Upcoming Weekly Tides (Semaglutide vs. Tirzepatide) against Obesity: STEP or SURPASS? *J Obes Metab Syndr.* 2022 Mar 30;31(1):28-36. doi: 10.7570/jomes22012. PMID: 35314521; PMCID: PMC8987449.

Injury Repair

Peptide therapy has been shown to be effective in healing of injured tissues in the body. One of the primary benefits of peptides for injury recovery is their ability to stimulate the production of collagen. Collagen is the most abundant protein in the human body and is a critical component of the connective tissues that hold our bones, muscles, and tendons together. Other ways peptide therapy for injury repair works by:

1. Stimulating the production of human growth hormone, which plays a critical role in tissue repair and regeneration.
2. Improving blood flow to injured tissues, allowing more oxygen and nutrients to be delivered to the affected area
3. Stimulating growth of blood vessels, which can help improve circulation and promote the growth of healthy tissue.
4. Reducing inflammation, which can help speed up the healing process and reduce pain.



Peptides for Injury Repair

BCP-157

BPC 157 (injection or oral) is a peptide that is naturally produced in the stomach. BCP-157 has shown to speed up the healing of various types of injuries, including tendons and damaged ligaments. BPC 157 also has pain-relieving properties that may reduce discomfort from muscle sprains, tears, or other damage. Benefits include:

- Decreased pain.
- Increased collagen synthesis.
- Quicker recovery times post-injury.
- Wound and bone healing.
- Decrease in inflammation.
- Relief from intestinal issues, such as gastric ulcers, leaky gut, IBS, gastrointestinal cramps, and Crohn's disease
- Protects the heart.

Chang CH, Tsai WC, Lin MS, Hsu YH, Pang JH. The promoting effect of pentadecapeptide BPC 157 on tendon healing involves tendon outgrowth, cell survival, and cell migration. *J Appl Physiol* (1985). 2011 Mar;110(3):774-80. doi: 10.1152/jappphysiol.00945.2010. Epub 2010 Oct 28. PMID: 21030672.



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Peptides for Injury Repair

TB-500

TB-500 is an injectable peptide that promotes healing of the tendons, ligaments, muscles, skin, heart, and eyes.

Benefits of TB-500 include:

- Increased cells in healing.
- Improves cell migration to the cite of the injury
- Soft tissue repair – tendon, ligament, muscle sports, and athletic injuries.
- Reduces scar tissue.
- Significant repair and regenerative properties.
- Enlarged muscle growth, muscle tone, and muscular stamina.

References:

Xing, Y., Ye, Y., Zuo, H., & Li, Y. (2021). Progress on the Function and Application Thymosin β 4. *Frontiers in Endocrinology*, 12. <https://doi.org/10.3389/fendo.2021.767785>

Goldstein AL, Hannappel E, Sosne G, Kleinman HK. Thymosin β 4: a multi-functional regenerative peptide. *Basic properties and clinical applications. Expert Opin Biol Ther.* 2012 Jan;12(1):37-51. doi: 10.1517/14712598.2012.634793. Epub 2011



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Peptides to Promote Brain Health

Peptide therapy has numerous benefits for brain health. Most notably, a class of peptides, melanocortins may help to improve cognitive function and memory. They do this by increasing blood flow to the brain, promoting the growth of new brain cells, and enhancing the brain's ability to use glucose and oxygen.

Melanocortins are peptides that have various effects on the body and brain. They can influence learning, behavior, regeneration, pain, inflammation, and nerve function. These peptides play a role in controlling behaviors like attention, learning, and memory formation by affecting the functions of the central nervous system.

Two such peptides, such as Selank and Semax may also be beneficial in reducing symptoms of anxiety and depression. These peptides have neuroprotective properties that may also help prevent or slow the progression of diseases like Alzheimer's and Parkinson's.



Peptides for Brain Health

Selank, Nasal Spray

Traditionally used to treat anxiety and depression, but has also shown to have a positive impact on memory and learning abilities. Selank offers a range of potential benefits, including:

- Improved memory and concentration.
- Increased mental energy.
- Reduced symptoms of anxiety and stress

Semax, Nasal Spray

Semax improves memory and mood by increasing blood and oxygen flow to the brain and boosting levels of dopamine and serotonin. Additional benefits include:

- Improved cognitive performance
- Prevention of future brain tissue damage
- Improved relaxation

Reference:

Syunyakov, Timur & S Teleshova, E & G Neznamov, G & Bochkarev, Vitaly. (2012). P-1114- Rapid and slow response during treatment of generalized anxiety disorder with peptide anxiolytic selank. *European Psychiatry*. 27.



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Sexual Health

Peptide therapy offers promising benefits for sexual health in both men and women. In men, it can address issues like impotence, erectile dysfunction, and premature ejaculation. For women, it provides a rapid boost in libido and increases sexual arousal.

PT-141

Bremelanotide was developed from the peptide hormone Melanotan II and has found to be effective in treating sexual dysfunction in both men (erectile dysfunction or impotence) and women (sexual arousal disorder). Unlike Viagra and other related medications, it does not act upon the vascular system but directly increases sexual desire via the nervous system. Benefits include:

- Increase sexual frequency.
- Boost sex drive.
- Treatment for men and women with hypoactive sexual desire disorder.
- Raise sexual desire.

References:

Edinoff AN, Sanders NM, Lewis KB, Apgar TL, Cornett EM, Kaye AM, Bremelanotide for Treatment of Female Hypoactive Sexual Desire. *Neurol Int.* 2022 Jan 4;14(1):75–88. doi: 10.3390/neurolint14010006. PMID: 35076581; PMCID: PMC878846

Shadiack, Annette & D Sharma, Shubh & C Earle, Dennis & Spana, Carl & Hallam, Trevor. (2007). Melanocortins in the Treatment of Male and Female Sexual Dysfunction. *Current topics in medicinal chemistry.* 7. 1137–44.

Conclusion



Peptide therapy is a promising new approach to health promotion that has the potential to improve the lives of millions of people. As research in this field continues to advance, we can expect to see even more applications for peptide therapy in the years to come.



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