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Thank you for entrusting in the compounding services at Madison Medical Compounding Pharmacy to help meet the unique medication needs of your patients. We are excited to share our monthly newsletter with you and look forward to working with you. Please don't hesitate to let us know how we can assist you and your practice.

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Updates on Therapeutic Alternatives for Genitourinary Syndrome of Menopause

Postmenopausal atrophic vaginitis is one of the most troublesome symptoms of menopause. However, many women do not manage this symptom properly due to insufficient knowledge of the condition or sexual embarrassment. With appropriate treatment, many postmenopausal women can experience relief from discomforts such as a burning sensation or dryness of the vagina and dyspareunia. Topical lubricants and moisturizers, systemic and local estrogens, testosterone, intravaginal dehydroepiandrosterone-s (DHEAs), and energy-based therapies are possible treatment modalities. Clinicians should provide appropriate individualized treatment options depending on a woman's history, symptom severity, and chief complaints.

[J Menopausal Med. 2021 Apr;27\(1\):1-7.](#)

Testosterone & Cognitive Function

Serum testosterone (T) declines progressively after age 40, and about 30% of men over age 70 have levels below the normal range for younger men. The significance of endogenous T levels in the aging man has been scrutinized extensively in regard to the effects on performance in many cognitive domains, especially verbal fluency, visuospatial and visuoperceptual abilities, memory, and executive function. Studies of T supplementation have sought to identify potential cognitive improvements in



men with and without baseline cognitive impairment and have had a wide range of results. The variability in outcomes is likely related to the lack of consensus on methods for T measurement and supplementation and to the disparate measures of cognitive function used in randomized controlled studies. Despite the limitations imposed by such inconsistent methods, promising associations have been found between cognition and testosterone supplementation in both eugonadal men and men with low testosterone levels, with and without baseline cognitive dysfunction.

Measurement T Levels and Cognitive Function: The inconsistent terminology that different authors use in describing gonadal states complicates the interpretation and comparison of studies. Because each reference laboratory determines its own “normal” T range, the same nominal T level may not be equivalent across studies. Many of the tests available to measure cognition focus on global cognitive function and/or the cognitive domains of attention, executive function, memory, visuospatial and visuo-perceptual ability, and/or language.

T Supplementation: The different routes by which T can be supplemented -oral, intramuscular injection, or buccal application, intranasal spray, implantable pellets, and transdermal patches or gels- can influence serum levels. The time of day the sample is taken is also critical. Oral preparations are rarely used now because they do little to raise T levels, and first pass metabolism by the liver worsens side effects. T levels are also influenced by dosage, formulation, timing, and duration of administration. Like the many ways that T can be supplemented, there are many ways that T levels can be measured and interpreted. Total Testosterone (TT) levels consist of both unbound and bound T, both of which can be determined by a serum test. The best measure of biologically functional T is not TT, but rather the combination of free T (FT) and bioavailable T (BT).

[Cogn Behav Neurol. 2016 September ; 29\(3\): 122–138.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5079177/pdf/nihms813981.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5079177/pdf/nihms813981.pdf)

Ask us about customized testosterone therapy to meet specific needs.

LDN in Long COVID

A single center interventional study explored the safety of Low Dose Naltrexone (LDN) in patients with Post COVID-19 Syndrome (PCS, Long COVID), defined as patients with ongoing symptoms 12 or more weeks after initial infections with SARS-CoV-2 where alternative explanation for symptoms cannot be found. Patients were recruited through a Post COVID clinic, had a baseline quality of life questionnaire, were prescribed 2 months (1 mg month one, 2 mg month two) of LDN and repeated the same questionnaire at the end of the second month. Patients were monitored for adverse events. In total, 52 patients participated of whom 40 (76.9%) were female. The median age was 43.5 years. The median time from diagnosis of COVID-19 until enrollment was 333 days. Thirty-eight participants (73.1%) started LDN, two of whom (5.3%) stopped taking LDN due to new onset diarrhea. In total 36 (69.2%) participants completed the questionnaire at the end of the two-month period. Improvement was seen in 6 of 7 parameters measured: recovery from COVID-19, limitation in activities of daily living, energy levels, pain levels, levels of concentration and sleep disturbance, and improvement in mood (which approached but was not significant $p = 0.054$). The study concluded LDN is safe in patients with Long COVID and may improve well-being and reduce symptomatology. Randomized controlled trials are needed to further explore this therapy.⁵

References:

- ¹ [J Neuroimmunol. 2015 Dec 15; 289:152-61.](#)
- ² [Endocr Metab Immune Disord Drug Targets. 2021; 21\(7\):1155-1162.](#)
- ³ <https://www.degruyter.com/document/doi/10.1515/hmbci-2021-0034/html>
- ⁴ [Eur Heart J Cardiovasc Pharmacother. 2022 Jun 8; 8\(4\):402-405.](#)
- ⁵ [Brain Behav Immun Health. 2022 Oct; 24:100485. Epub 2022 Jul 3.](#)

We welcome your questions.

