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NEWER TREATMENT MODALITIES IN HYPOTHYROIDISM

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While levothyroxine (T4) monotherapy has been the gold standard for decades, recent advancements in research and clinical practice have introduced alternative and adjunctive treatment options. These newer modalities aim to address persistent symptoms in some patients and improve overall quality of life.

Lifestyle and dietary intervention: Complementary approaches, including dietary modifications and supplementation, are gaining traction. Selenium, vitamin D, and magnesium supplementation, along with gluten-free and autoimmune protocol diets, have shown potential in supporting thyroid function and reducing inflammation.

The combined result from various studies on newer treatment modalities in hypothyroidism suggests that while levothyroxine (T4) monotherapy remains the standard treatment, alternative approaches such as combination therapy (T4 + T3), desiccated thyroid extract (DTE), and extended-release T3 formulations show promise for patients who do not respond adequately to T4 alone. Personalized medicine, incorporating genetic testing and lifestyle interventions, is increasingly emphasized to optimize treatment outcomes and improve quality of life. Levothyroxine remains the cornerstone of hypothyroidism treatment. It effectively normalizes thyroid-stimulating hormone (TSH) levels in most patients. However, a subset of individuals continues to experience symptoms such as fatigue, weight gain, and mental fog despite achieving biochemical euthyroidism. This has prompted exploration into alternative therapies. Recent studies have highlighted the potential benefits of combining levothyroxine (T4) with liothyronine (T3). Combination therapy aims to mimic the natural secretion of thyroid hormones, offering a more physiological approach. Research has shown that this method may alleviate symptoms in patients unresponsive to T4 monotherapy.

Desiccated thyroid extract, derived from animal thyroid glands, contains both T4 and T3. Although it was one of the earliest treatments for hypothyroidism, it has regained attention due to its potential benefits in certain patient populations. Studies suggest that DTE may lead to modest weight loss and improved mental health compared to levothyroxine alone.

Innovative treatments are also being explored. **Extended-Release T3 Formulations:** these provide a steady release of T3, reducing fluctuations in hormone levels and improving symptom management. **Low-Dose Naltrexone (LDN):** this immunomodulatory drug shows promise in reducing thyroid antibody levels in autoimmune hypothyroidism. **Biologic Drugs and Immunotherapies:** these are being investigated for their potential to target underlying autoimmune processes in conditions like Hashimoto's thyroiditis. **Personalized Medicine**

Advancements in genetic testing and microbiome analysis are paving the way for personalized treatment strategies. By tailoring therapies to individual genetic and metabolic profiles, clinicians can optimize outcomes and minimize side effects. The review of collective research highlights that while levothyroxine remains the standard treatment, combination therapy and DTE may offer benefits for patients who do not respond adequately to T4 monotherapy. Personalized approaches, considering patient preferences and genetic factors, are increasingly emphasized to optimize treatment outcomes.