



T 3 AND DEPRESSION

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1: N Engl J Med 1999 Feb 11;340(6):424-9

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Effects of thyroxine as compared with thyroxine plus triiodothyronine in patients with hypothyroidism.

Bunevicius R, Kazanavicius G, Zalinkevicius R, Prange AJ Jr.

CONCLUSIONS: In patients with hypothyroidism, partial substitution of triiodothyronine for thyroxine may improve mood and neuropsychological function; this finding suggests a specific effect of the triiodothyronine.

□ 1: BMJ. 2003 Feb 8;326(7384):295-6.

T4 AND T3 TREATMENTS

Thyroid function tests and hypothyroidism.

Toft AD, Beckett GJ.

Although the potential improvement in the well-being of patients with hypothyroidism while taking a **combination of T3 and T4** is of great interest, the greatest advantage will be the security of a normal TSH while taking physiological replacement.

□ 1: Thyroid. 2004 Apr;14(4):271-5.



T4 AND T3 TREATMENTS

Thyroxine plus low-dose, slow-release triiodothyronine replacement in hypothyroidism: proof of principle.

Hennemann G, Docter R, Visser TJ, Postema PT, Krenning EP.

Studies in hypothyroid rats show that, when infused with a combination of thyroxine (T4) plus triiodothyronine (T3) to normalize thyrotropin (TSH), euthyroidism in all organs is only ensured when T4 and T3 are administered in a ratio as normally secreted by the rat thyroid.

Thyroid Hormone Replacement for Central Hypothyroidism: A Randomized Controlled Trial Comparing Two Doses of Thyroxine (T₄) with a Combination of T₄ and Triiodothyronine

Marc Slawik, Björn Klawitter,* Edith Meiser,* Marcus Schories, Oliver Zwermann, Katrin Borm, Martin Peper, Beate Lubrich, Martin J. Hug, Markus Nauck, Manfred Olschewski, Felix Beuschlein, and Martin Reincke

Thus, using a fixed starting dose of T₄ (e.g. 1.6 µg/kg body weight), combined with thyroid hormone determinations aiming at **free T₄ levels close to the upper normal limit** and **free T₃ levels in the upper half of the normal range**, seems to be a reasonable approach.

Common Variation in the *DIO2* Gene Predicts Baseline Psychological Well-Being and Response to Combination Thyroxine Plus Triiodothyronine Therapy in Hypothyroid Patients

J Clin Endocrinol Metab, May 2009, 94(5):1623–1629

T4 AND T3 TREATMENTS

Vijay Panicker, Ponnusamy Saravanan, Bijay Vaidya, Jonathan Evans, Andrew T. Hattersley, Timothy M. Frayling, and Colin M. Dayan

Up to 3% of the population in Western countries is on thyroid hormone replacement (1), the majority on T4 alone. However, the adequacy of this to replace physiological requirements and reverse patient's symptoms remains controversial due to several observations.

Effect of combination therapy with thyroxine (T₄) and 3,5,3'-triiodothyronine versus T₄ monotherapy in patients with hypothyroidism, a double-blind, randomised cross-over study.

Nygaard B, Jensen EW, Kvetny J, Jarløv A, Faber J.

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T₄ AND T₃ TREATMENTS

Conclusion: In a study design, where morning TSH levels were unaltered between groups combination therapy, **(treated with T₃ 20 mcg once daily) was superior to monotherapy** by evaluating several quality of life (QOL), depression and anxiety rating scales as well as patients own preference.

CLINICAL STUDY

T4 AND T3 TREATMENTS

Effect of combination therapy with thyroxine (T₄) and 3,5,3'-triiodothyronine versus T₄ monotherapy in patients with hypothyroidism, a double-blind, randomised cross-over study

Birte Nygaard, Ebbe Winther Jensen, Jan Kvetny¹, Anne Jarløv² and Jens Faber

Department of Endocrinology, Herlev Hospital, University of Copenhagen, Herlev Ringvej, DK-2730 Herlev, Denmark, ¹Department of Endocrinology, Esbjerg Hospital, Esbjerg, Denmark and ²Department of Endocrinology, Frederiksberg Hospital, Frederiksberg, Denmark

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These results indicate that T₃ originating from the thyroid gland and not only from local deiodination of T₄ seems needed to keep optimal balance in the tissues.

Effect of combination therapy with thyroxine (T₄) and 3,5,3'-triiodothyronine versus T₄ monotherapy in patients with hypothyroidism, a double-blind, randomised cross-over study.

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T₄ AND T₃ TREATMENTS

No differences with regard to side effects were seen. During T₄/T₃ combination therapy five subjects experienced side effects: palpitations ($n=3$), excessive sweating ($n=1$), and psychological instability ($n=1$); during T₄ monotherapy: nine subjects reported side effects: palpitations ($n=5$), excessive sweating (1), and psychological instability (3).

Do we need still more trials on T4 and T3 combination therapy in hypothyroidism?

Wiersinga WM.

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T4 AND T3 TREATMENTS

Reasons for publication might have been (...) paying attention to the unresolved issue of persisting complaints in a subset of hypothyroid patients despite what we call adequate doses of T4 replacement.