Synthroid vs Desiccated (Armour) Thyroid

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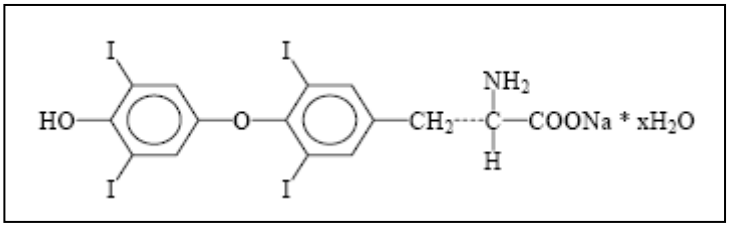
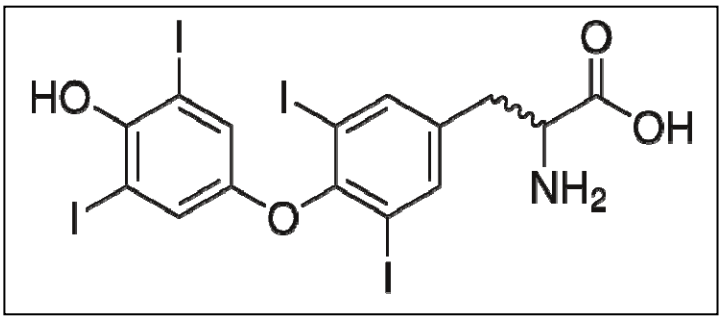
Thyroxine (T4) is a hormone that is produced by the thyroid gland. Triiodothyronine (T3) is another hormone that is produced by thyroid or it is converted from Thyroxine. Desiccated Thyroid is derived from the thyroid gland of pigs. It contains all of the hormones and perhaps things that haven't been discovered yet. By FDA law, batches of desiccated thyroid are required to contain a specific amount of T4 and T3 within a few percent.

Synthroid is not synthetic thyroxine. If it were, it would be identical to desiccated thyroid. A chemical compound is the same regardless of whether it is synthesized or found naturally. Synthroid is Levothyroxin sodium. The hormone that is produced by the thyroid gland is thyroxine.



Synthroid
$C_{15}H_{10}I_4N\ NaO_4 - H_2O$



Thyroxine
$C_{15}H_{11}I_4NO_4$

As seen above, there is a difference between the two chemical formulas. They are similar, but not identical. The human body wants thyroxine, not something similar.

"Effects of Thyroxine as Compared with Thyroxine plus Triiodothyronine in Patients with Hypothyroidism
Robertas Buneveius, M.D., Ph.D., Gintautas Kazanavicius, M.D., Ph.D., Rimas Zalinkevicuis, M.D., and Arthur J. Prange, M.D. - The New England Journal of Medicine, February 11, 1999.

Background: Patients with hypothyroidism are usually treated with thyroxine (levothyroxine) only, although both thyroxine and triiodothyronine are secreted by the normal thyroid gland. Whether thyroid secretion of triiodothyronine is physiologically important is unknown.

Methods: We compared the effects of thyroxine alone with those of thyroxine plus triiodothyronine (liothyronine) in 33 patients with hypothyroidism. Each patient was studied for two five-week periods. During one period, the patient received his or her usual dose of thyroxine. During the other, the patient received a regimen in which 50 μg of the usual dose of thyroxine was replaced by 12.5 μg of triiodothyronine. The order in which each patient received the two treatments was randomized. Biochemical, physiologic, and psychological tests were performed at the end of each treatment period.

Results: The patients had lower serum free and total thyroxine concentrations and higher serum total triiodothyronine concentrations after treatment with thyroxine plus triiodothyronine than after thyroxine alone, whereas the serum thyrotropin concentrations were similar after both treatments. Among 17 scores on tests of cognitive performance and assessments of mood, 6 were better or closer to normal after treatment with thyroxine plus triiodothyronine. Similarly, among 15 visual-analogue scales used to indicate mood and physical status, the results for 10 were significantly better after treatment with thyroxine plus triiodothyronine. The pulse rate and serum sex hormone–binding globulin concentrations were slightly higher after treatment with thyroxine plus triiodothyronine, but blood pressure, serum lipid concentrations, and the results of neurophysiologic tests were similar after the two treatments.

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 normally secreted by the thyroid gland."

"Animal studies have shown that T 4 is only partially absorbed from the gastrointestinal tract. The degree of absorption is dependent on the vehicle used for its administration and by the character of the intestinal contents, the intestinal flora, including plasma protein, soluble dietary factors, all of which bind thyroid and thereby make it unavailable for diffusion. Only 41% is absorbed when given in a gelatin capsule as opposed to a 74 percent absorption when given with an albumin carrier.

Depending on other factors, absorption has varied from 48 to 79% of the administered dose.

Fasting increases absorption. Malabsorption syndromes, as well as dietary factors (children's soybean formula, concomitant use of anionic exchange resins such as cholestyramine), cause excessive fecal loss. T3 is almost totally absorbed, (95% in 4 hours). The hormones contained in the natural preparations are absorbed in a manner similar to the synthetic hormones." - Park-Davis Pharmaceutical Company."

"FDA Poised to Recall Synthroid
VRP Newsletter, July 2001

The FDA (Food and Drug Administration) is poised to force Abbott Laboratories' to recall its popular synthetic thyroid medicine, Synthroid (levothyroxine). In a letter sent to Abbott Laboratories in April, the FDA rejected a petition from Abbott to continue sell the 40 year-old drug without filing a new drug application (NDA) detailing the drugs safety and effectiveness. In its letter, the FDA said that Synthroid has a "history of problems" and cannot "generally recognized as safe and effective." Synthroid is the third most

commonly prescribed drug in the US, used by about two thirds of the estimated 13 million Americans with Hypothyroidism, thyroid cancer and other thyroid conditions.

In response three professional and patient advocacy groups approached the FDA in June, to urge the agency to defer any action on Synthroid. The American Thyroid Association, The Endocrine Society, and Thyroid Cancer Survivor Association, expressed concerns that the removal of Synthroid would "cause alarm, inconvenience, and cost for patients who are doing well on their current thyroid medication," said Dr. Paul Ladenson, secretary of the American Thyroid Association.

However, the FDA has refused to rule out asking for the drug's withdrawal, saying it believes that other drugs in Synthroid's class fill the void."