

---

# Desiccated Thyroid in a Nutritional Supplement

B. Clair Eliason, MD; Jan A. Doenier, MD; and Dale N. Nuhlicek, MS, RD

Milwaukee, Wisconsin

---

Nutritional or vitamin supplements, which are largely unregulated by the Food and Drug Administration (FDA) and are sold in health food stores and through mail-order catalogs, may contain various combinations and doses of vitamins, minerals, herbs, chemicals, and animal tissues. Some of the products marketed as nutritional supplements contain desiccated porcine or bovine thyroid.

A patient came to our family practice center with resting tachycardia, amenorrhea, and weight loss. She had been taking a nutritional supplement containing desic-

cated thyroid for 3 months. Laboratory studies confirmed the presence of hyperthyroidism. The daily recommended and consumed dose of the product she had been taking exceeded the normal replacement dose by two to three times.

There is potential for harm in the unregulated availability and distribution of desiccated thyroid to the public.

*Key words.* Hyperthyroidism; vitamins; thyroid gland, desiccated; thyroid gland; nutrition; self-medication.

(*J Fam Pract* 1994; 38:287-288)

---

Americans make wide use of unconventional medical therapies,<sup>1</sup> such as nutritional supplements sold through health food stores, pharmacies, and by mail order. These products include various combinations of vitamins, minerals, amino acids, herbs, enzymes and animal tissues. Supplements made from food sources are minimally regulated by the Food and Drug Administration (FDA). The FDA requires only that such supplements "must be prepared from clean, wholesome, raw materials processed under sanitary conditions and properly labeled" (Steve Davis, Milwaukee branch office of FDA, personal communication, 1992). If there are claims of a therapeutic or drug effect, the FDA requires a premarket safety review.<sup>2</sup>

Various animal tissues, such as desiccated bovine or porcine thyroid, are included in many nutritional supplements. Desiccated thyroid contains active thyroid hormones that could be harmful when taken inappropriately.<sup>3</sup>

The following case illustrates the harm that can

result from unconventional therapy with substances containing active thyroid hormones.

## Case Report

A 20-year-old female nursing student presented to a family practice center with the chief complaint of amenorrhea for 8 months. She also reported feeling nervous and having a resting pulse of 120 to 130 beats per minute. She had lost 30 pounds during this period, but she had been trying to lose weight. Using a highly sensitive thyroid-stimulating hormone (TSH) methodology, the TSH was suppressed to <0.03 mU/L (normal, 0.32 to 5.0). Previous medical records showed a normal TSH 4 months earlier at 1.1 mU/L. Additional history showed that for the past 3 months, she had been taking a nutritional supplement (metabolic complex). According to the label, each tablet contained pyridoxine 10 mg, pantothenic acid 10 mg, thiamine hydrochloride 2 mg, bovine thyroid 60 mg, adrenal tissue 25 mg, pituitary tissue 5 mg, spleen tissue 15 mg, thymus 15 mg, and kelp 30 mg. The animal tissues were desiccated. The label on the product instructed the patient to take one to three tablets with meals. Accordingly, she had been taking six to nine tablets per day.

---

Submitted, October 26, 1993.

From the Department of Family and Community Medicine, Medical College of Wisconsin, Milwaukee. Requests for reprints should be addressed to B. Clair Eliason, MD, Associate Professor, Department of Family and Community, Medical College of Wisconsin, 1000 North 92nd St, Milwaukee, WI 53226.

© 1994 Appleton & Lange

ISSN 0094-3509

The Journal of Family Practice, Vol. 38, No. 3(Mar), 1994

287

She discontinued this product. Eleven days later, her TSH remained low ( $<0.03$  mU/L). Six weeks later, a repeat TSH was normal at 1.76 mU/L, and her resting pulse was 75 beats per minute. Two months after discontinuing this product, her menstrual periods resumed.

Desiccated thyroid is known to contain active thyroid hormones. Two products, Armour thyroid tablets (porcine) and Thyrolar (bovine) are FDA-approved drugs.<sup>4</sup> The therapeutic dose of desiccated thyroid is 60 mg to 200 mg per day. The patient in this case was taking 300 mg to 540 mg per day, consistent with the instructions on the label.

Sawin and London<sup>4</sup> reported a similar case in 1989. Their patient had had a thyroidectomy and preferred taking thyroid preparations from a health food store. The patient took a preparation of desiccated thyroid that, according to the label, had been processed to remove thyroxin. Following the dose recommended on the label, the patient developed hyperthyroidism while taking this nonregulated thyroid preparation.

There is great potential for further harm if these products remain unregulated with instructions recommending potentially dangerous dosages. A telephone survey of local health food stores in the Milwaukee area showed that 15 of 32 carried supplements containing thyroid, suggesting widespread distribution. An adverse reaction regarding this product has been filed with the FDA. A MEDLINE review of the medical literature for the past 20 years and a popular endocrinology text<sup>5</sup> did

not reveal other reports of vitamin supplements containing desiccated thyroid as being potentially dangerous to patients. Nevertheless, an excess of thyroid hormone can be toxic and result in seizures<sup>6</sup> and cardiac problems, including arrhythmias, heart failure,<sup>7</sup> ischemia, and death.<sup>8</sup> Physicians should be aware of nonprescription and unconventional products that patients may be taking. Closer regulation of nutritional supplements containing desiccated thyroid is needed.

#### References

1. Eisenberg DM, Kessler RC, Foster C, et al. Unconventional medicine in the United States; prevalence, costs and patterns of use. *N Engl J Med* 1993; 328:246-52.
2. Taylor MR. The dietary supplement debate of 1993: an FDA perspective. Paper presented at the annual meeting of the Federation of American Societies for Experimental Biology, New Orleans, March 31, 1993.
3. Physicians' desk reference. 47th ed. Oradell, NJ: Medical Economics Co, Inc, 1993.
4. Sawin CT, London MH. Natural desiccated thyroid: a health-food thyroid preparation. *Arch Intern Med* 1989; 149:2117-8.
5. Braverman R, Utiger L, eds. *Werner & Ingbar, the thyroid*. 6th ed. Philadelphia, Pa: JB Lippincott Co, 1991.
6. Kulig K, Golightly LK, Rumack BH. Levothyroxine overdose associated with seizures in a young child. *JAMA* 1985; 254:2109-10.
7. Scarpinato L, Vacek JL. Myocardial infarction: severe irreversible ischemia and shock following excess thyroid administration in a man with normal coronary arteries. *Arch Intern Med* 1989; 149:701.
8. Bhaain S, Wallace W, Lawrence JB, Leach M. Sudden death associated with thyroid hormone abuse. *Am J Med* 1981; 71:887-90.