

Can what you eat really damage your thyroid?

written by Dr. Ronald Hoffman | March 24, 2016

I'm about to embark on a discussion of one the most controversial topics I've ever touched upon.

Is it Donald Trump's candidacy?

Same-sex marriage?

Gun control?

No, none of the above. It's whether certain foods can be goitrogens, to be avoided by those with—or those at risk for—thyroid problems.

Properly-speaking, the term goitrogen is a misnomer, because a goiter is actually an enlarged thyroid. No food has the potential to make the thyroid expand in size. Period.

An enlarged thyroid can be the result of autoimmune thyroiditis (Hashimoto's, which results in hypothyroidism, or Graves' Disease which causes hyperthyroidism). A nutritional deficiency of iodine is a common cause of goiter world-wide, and used to be here in the U.S. prior to the introduction of iodized salt and widespread availability of seafood. Or, a goiter could be the result of a common benign tumor (multinodular goiter)—causation unclear.

But foods don't give you a big lump in your neck. They do, however, have the potential to impair your thyroid function.

You've probably heard that those who have a thyroid problem shouldn't eat cruciferous vegetables or soy products, which are said to be goitrogens.

I never put much stock in these claims because by the time you have impaired thyroid function, it's likely the best "fix" is to take appropriately-dosed natural thyroid replacement. This can be virtually life-changing for many patients. The small amount of thyroid function you might retrieve by avoiding certain foods is trivial compared to the effect of the medication. I've never seen a patient go on a goitrogen-free diet and recover thyroid function sufficiently to lower their thyroid medication, much less completely go off it.

But what of the extravagant claims, promoted by popular health websites, that you should avoid certain foods for optimal thyroid health? They feature catchy headlines like these:

"11 Foods That Affect Your Thyroid Health"

"Eat goitrogens in moderation... and that includes soy and soya!"

“Goitrogens: Thyroid Inhibiting Foods You Should Avoid”

“All About Goitrogens and Cruciferous Vegetables for Thyroid Patients”

“Help Your Thyroid by Limiting or Avoiding Goitrogenic Foods... “

“News Update: Can Kale Cause Hypothyroidism?”

There’s a lot of misinformation out there. A sort of goitrogen echo chamber has been established that has since sent millions of Internet-savvy thyroid patients lock-stepping into avoidance of a wide array of potentially lifesaving foods.

What is the actual scientific substantiation for these claims?

Cruciferous vegetables—the cabbage family—is comprised of broccoli, Brussels sprouts, cauliflower, turnip greens, Chinese cabbage or bok choy, cabbage, kale, collard greens, rutabaga, and kohlrabi. They are rich in nutrients—calcium, vitamin K, carotenoids, and sulforaphane.

Through their pioneering research in the 90’s, researchers Paul Tallalay and Y. Chang of Johns Hopkins University School of Medicine identified a potent anti-carcinogenic substance in broccoli: glucoraphanin. Its breakdown product, sulforaphane glucosinolate (SGS), was ultimately patented as the active ingredient in BroccoSprouts, a functional food delivering cancer chemo-prevention benefits. (The patent was ultimately rescinded after a court decision in favor of competing sprout manufacturers who challenged BroccoSprouts’ exclusivity.)

In addition to cancer, sulforaphane has shown promise in alleviating conditions ranging from asthma to cardiovascular disease—most recently even autism.

In contrast to these beneficial effects, cruciferous vegetables, like certain species of kale and bok choy, contain the aforementioned goitrogens, which have an anti-thyroid effect, interfering with iodine uptake. In one case, an 88-year-old Chinese woman was found by her family to be lethargic. She was unable to walk or swallow for three days, and was brought to the emergency room. It was discovered that she had consumed an estimated 2-3 pounds of raw bok choy daily for several months in the belief that it would help control her diabetes. Tests revealed her to have almost no thyroid function at all. She recovered completely with administration of thyroid hormone.

The trick is to garner the well-established benefits of cruciferous vegetables without these downsides. Should moderate consumers of cabbage family vegetables be concerned about thyroid suppression? According to a recent review, the consumption of typical servings of raw commercial broccoli, Chinese cabbage, bok choy, or broccoli rabe deliver glucosinolates “at concentrations far lower than those likely to impair thyroid function.”

On the other hand, researchers found a possible thyroid-suppressive effect of kale (but only the Russian or Siberian species of kale, not the other kinds), some collards, and Brussels sprouts. **But these would have to be consumed raw,**

and in amounts greater than 1 kilogram (2.2 pounds) per day for several months! It would be hard to exceed that threshold, unless you were to juice massive amounts of kale, day-in, day-out.

What, then, about soy? Is it bad for sufferers of thyroid disorders (or those worried about getting them) to eat soy products? The popular website thyroid-info.com states: "For adults, just 30 mg of soy isoflavones per day is the amount found to have a negative impact on thyroid function."

But while concerns have been raised about the negative effects on thyroid function of prolonged feeding of infants with soy-based formula, my research didn't reveal any authoritative studies that suggest that dietary soy consumption has any practical impact on the thyroids of adults.

In fact, most studies do not show a significant effect of soy consumption on circulating levels of TSH, T4, free T4, T3, free T3 or thyroid binding globulin (TBG). Some authors have suggested that whatever the deleterious effects of soy on the thyroid, they can easily be overcome with adequate provision of iodine and selenium.

(Notwithstanding its negligible effect on thyroid function, soy may not be for everyone; soy intolerance is widespread, and the verdict is not yet in on soy's effect on sexual maturation or certain hormonal cancers.)

Finally, the role of gluten—not properly considered a goitrogen—must be considered in a discussion of dietary influences on thyroid function. Autoimmunity is a major driver of thyroid disorders, and, for some, gluten elimination even in the absence of overt celiac disease can prove a key to alleviating immune dysregulation. According to Dr. Amy Myers, author of *The Autoimmune Solution*, gluten consumption can precipitate "leaky gut syndrome" which allows macromolecules to traverse GI barriers and trigger mischief in remote parts of the body.

Does this mean that everyone who consumes gluten is auditioning for a thyroid disorder? Far from it. But, especially for sufferers of Hashimoto's thyroiditis, a trial of gluten elimination might be warranted, particularly if blood tests confirm elevated anti-gliadin antibodies.

My verdict: Concerns about thyroid-damaging foods are exaggerated, parroted endlessly on the Internet, and not backed up by scientific research. Don't let goitrogen alarmists deprive you of the benefits of healthful foods, consumed in moderation, even if you have thyroid problems. And be a wary consumer of Internet health advice.