**Diet in Thyroid Disorders: Myths and Facts**

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Sir,

I eat all vegetables?

This is a question faced by physicians almost every day. But physicians often are at a loss to answer this question correctly. There are a lot of myths surrounding this topic and people (including physicians) are often misled by the junk pseudoscientific articles available online and in various sensational “health magazines”.

This correspondence is a small attempt to put the facts straight in this regard.

First of all, it must be stressed that there is no special diet for thyroid diseases and patients with hypo-or hyperthyroidism can have the same meal as others. However, one myth, which is widely prevalent in the Indian society, is that concerning vegetables of the Brassica family, like cauliflower, cabbage, Brussel’s sprouts and broccoli. In various discussions, they are often referred to as “goitrogen”. Probably, this myth started in the scientific community after publication of the reports by Chesney et al in 1928, where it was said that rabbits fed on fresh cabbage developed goitre. In 1936, another report was published where it was shown that rats fed on Brassica seeds also developed goitre. This led to the conclusion that humans were also susceptible to goitre after eating these food items. In the early days, this was even given a name: Cabbage Goitre. Much has changed in biochemistry and nutrition science after that; but somehow, this myth about goitre has endured.

Biochemical analysis has revealed that vegetables of the Brassica family contain sulphur compounds called glucosinolates. These may be converted to bioactive isothiocyanates inside the human body. This compound may inhibit thyroid hormone (T4) synthesis, leading to hypothyroidism. But conversion of glucosinolates to isothiocyanates requires an enzyme called myrosinase, which is also present in the same vegetable. Good cooking will completely destroy this enzyme and thus the conversion of Glucosinolate and subsequent effect on thyroid function will be absent. So, properly cooked vegetables of Brassica family are not banned in patients with hypothyroidism. If someone consumes raw cabbage (e.g. in salad or burger) there is hypothetically a risk of generation of isothiocyanates. But the amount, in occasional consumption, is too small to be of any significance.

There are, however, some other food items which can have a substantial effect on the thyroid gland function. One of them is seaweed like kelp. This contains excess iodine. This is mainly an ingredient of Chinese food but recently, many restaurants in our country have also started offering this in their menu. If someone consumes kelp in excess, thyroid hormone synthesis maybe inhibited by the Wolff-Chaikoff effect (especially if that person is borderline iodine deficient). Similarly, in Grave’s disease patients, such seaweed consumption may cause thyrotoxicosis by Jod-Basedow phenomenon.

Soy beans are another group of products which may have some effect on the thyroid. It contains Flavonoids. In large doses, these chemicals may inhibit the Thyroperoxidase enzyme. For euthyroid patients this may be negligible but those patients who are living in iodine deficient areas and are subclinically hypothyroid, excess flavonoid intake may precipitate clinical hypothyroidism. Similar effects have also been observed with excess Green tea consumption.

Thus, in conclusion, most food items are safe for all patients with dysfunction of the Thyroid gland. Only a few items like Soya bean may be used with caution, especially in areas where iodine intake is insufficient. Generally speaking, if iodized salt is consumed by everyone, then these dietary effects on thyroid can be totally ignored. But there are some places in India where environmental iodine content is low (and thus, vegetables grown in those areas are also deficient in Iodine) and there are many people who have recently developed a fad for “Rock Salt”. In such populations, these dietary factors may become significant.

One more caveat which the authors would like to point out is biotin supplementation and laboratory testing for thyroid hormones. Biotin does not affect the thyroid gland function, but it interferes with the in vitro tests and causes biochemical anomalies. Thus, thyroid profile testing should not be done in someone on biotin supplementation.

**References**