

## GOITROGENS

Goitrogens are substances that interfere with thyroid function. Goitrogens are found in many foods --- including foods that are considered healthful.

There are five mechanisms by which goitrogens can interfere with Thyroid Function ...

1. Some goitrogens block the uptake by the thyroid gland of iodine --- a critical element needed by the gland to produce thyroid hormones.
2. Some inhibit intestinal absorption of iodine.
3. Some substances interfere with the thyroid gland's ability to produce thyroid hormones.
4. Some goitrogens have no effect directly on the thyroid gland. They interfere with thyroid function by inhibiting the conversion of thyroxine to the active thyroid hormone triiodothyronine (primarily in the liver, kidneys and muscles).
5. Some substances interfere with the transport of thyroid hormones into cells, or into organelles.

### GRAINS

- Millet

VEGETABLES (high in thiocyanates (--- Oxy Tonic blocks their goitrogenic effect), or certain flavonoids)

- Green Tea
- Broccoli
- Cauliflower
- Cabbage
- Kale
- Collard greens
- Mustard greens
- Brussel sprouts
- Bokchoy
- Spinach
- Corn
- Horseradish
- Cassava --- Tapioca
- Sweet potato
- Turnips and Rutabagas
- Radishes

## FRUITS

- Strawberries
- Peaches
- Nectarines
- Plums
- Apricots
- Pears
- Cherries
- Raspberries

## BEANS

- Soybeans
- Lima beans
- (All legumes = sources of isoflavones)

## NUTS AND SEEDS

- Peanuts
- Almonds
- Walnuts
- Canola oil
- Flaxseed/Linseed
- Pine nuts
- (All polyunsaturated oils bind I (includes fish oil))

## HORMONES

- Estrogen (increases Thyroid binding globulin = prevents Thyroid hormones release from the blood into cells)
- Prolactin
- (Excess Cortisol?)

## DRUGS

- Benzodiazepines
  - Xanax (Alprazolam)
  - Tranxene
  - Valium (Diazepam)
  - Ativan (Lorazepam)
  - Ambien
  - Lunesta
  - Librium
  - Restoril

- Phenobarbital, Dilantin, Tegretol
- Amiodarone
- Lithium
- Thiocyanate (from cigarette smoking)
- Bromine (added to flour as a dough conditioner), chlorine, and fluoride = decrease I absorption and increase I excretion
- Nitrates in food and water
- Cysteine excess
- Calcium excess
- Zinc excess
- Manganese excess
- Iodine/Iodide excess (including I-containing radiographic contrast agents)
- Tamoxifen
- Beta Blockers and Calcium Channel Blockers (will also increase Triglycerides and Cholesterol)
- SSRI drugs (Prozac, Zoloft, Paxil, Lexapro, Celexa)
- Thiazide Diuretics
- Interferon-alpha, Interleukin-E