The Thyroid and Drugs, Chemicals and Foods
Drugs and Chemicals That Can Cause Problems

In her book ‘Coping with Thyroid Problems’ Dr. Joan Gomez lists the following:

**Medicines that can strain your thyroid**

Any of the following can interfere with the smooth working of the gland, or at least upset the tests:

- Tolbutamide (Rastinon), for diabetes
- Chlorpropamide (Diabinese), also for diabetes
- Phenylbutazone (Butacote) for ankylosing spondylitis
- Diazepam (Valium) for anxiety
- Heparin, to prevent clotting in heart problems. Blood thinning drugs like Warfarin, Coumadin or Heparin can on occasion become stronger in the system when thyroid hormone is added to the mix.
- Lithium (Priadel) to prevent relapse in psychiatric illness. More than a third of people taking lithium develop an underactive thyroid
- Beta blockers (e.g. Propranolol, Inderal,) for high blood pressure
- Salicylates, including aspirin (e.g. Disprin), a pain killer
- Steroids (e.g. prednisolone) for any severe physical reaction
- Phenothiazines (e.g. Largactil) major tranquillisers
- Amiloride (e.g. Moduretic) a water tablet
- Androgens (e.g. testosterone) male sex hormone
- Tamoxifen, an anti-oestrogen to ward off breast cancer
- Sulphonamides (Diamox) for glaucoma and fluid retention
- Resorcinol (Anusol) used for piles
- PAS for tuberculosis
- Prochlorperazine (Stemetil) for nausea and vomiting

All of these medicines suppress thyroid activity, so that the level of T4 in the blood is low, even if the gland is perfectly healthy. Sometimes, particularly with lithium, Hashimoto Disease develops.
The following medicines have a different effect

Phenytoin and related medicines – these anticonvulsants, used to control epilepsy, use up the thyroid hormones unusually quickly, and this may cause a shortage.

Phenobarbital and Carbamazepine - can accelerate the degradation and increase the dose requirement for L-T4.

Diphenylhydantoin may interfere with thyroxine binding to binding proteins and thereby reduce T4 levels.

Valproic acid – causes increase in TSH levels in children (subclinical hypothyroidism)

Co-trimoxazole (Septrin) – for urinary infections – also inhibits the release of T4 into the blood

Levodopa (Sinemet) and bromocriptine (Parlodel) are both used for Parkinson’s disease and both stop the stimulating action of TSH, leading to less T4 and T3.

Adrenaline – Anaesthetic used by dentists

Medicines that seem to increase T4 and T3 (Although neither actually stimulates the production of more hormones)

Frusemide-type water tablets (e.g. Lasix) by getting rid of fluid, make the blood more concentrated so there is more of the hormones per millilitre.

Oestrogen (in the contraceptive pill and HRT), provides more of the transport protein

Medicines containing iodine

Be wary of these if you have ever had a thyroid problem, and think if it could be your thyroid if you get some puzzling symptoms when you are taking one of them.
Foods That Can Cause Problems

Goitrogenic Foods

Goitrogenic foods can act like an antithyroid drug in disabling the thyroid function. They prevent the thyroid from using available iodine. It is made worse if you use a lot of salt because that causes the thyroid to swell. Do not eat these in large amounts if you are taking thyroid hormone replacement. It is thought that the enzymes involved in the formation of goitrogenic materials in plants can be destroyed by cooking, so cook these foods thoroughly if you want to eat them.

- Brussels sprouts, rutabaga, turnips, cauliflower, cabbage and kale
- almonds, peanuts and walnuts
- sweetcorn, sorghum and millet
- soya – this combined with a high fibre diet causes too much thyroid hormone and iodine to be excreted from the body
- raw Swedes, turnips and kale - These are sometimes fed to cattle and comes to us via their milk products.

These medicines are liable to give your thyroid more iodine than it can cope with. It may react by going into overdrive and producing too much hormone, with anxiety and palpitations in consequence, especially to start with. The usual end result, however, is near-complete downing of tools by the gland so that it runs into obvious underactivity, and general bodily slowing up.

- Amiodarine (Cordarone X) is an excellent medicine for tricky faults in the rhythm of the heart, but it causes thyroid problems in 6% of people taking it. These may be due to either under or overactivity, with totally different symptoms: snail-pace or edgy speed. Since it takes a long time to clear Amiodarone from the circulation, and anyway it may be vital for the heart, it is usually best to continue with it, but help the thyroid with other drugs. These will be thyroxine in the case of underactivity, or an antithyroid such as Carbimazole in the opposite situation.

- Cough medicines containing iodides including over the counter preparations are not for you if you’ve ever had a thyroid problem.

- X-ray contrast media given for instance for gall-bladder investigation. Povidone skin antiseptic (Betadine) and tincture of iodine. Very little iodine is likely to get into the system from these but they should be avoided during pregnancy.

- Multivitamin/multimineral health pills

Salicylates

Salicylate is a term used to describe a group of drugs that are chemically related to salicylic acid, which is a simple, single- ringed organic molecule that occurs naturally as a component of salicylin (a glucoside found in Willow Bark) and methyl salicylate (in Oil of Wintergreen). These natural products are usually used in the treatment of Rheumatism. However, in 1899 the semi synthetic drug Acetylsalicylic acid was introduced under the name Aspirin.
Drugs Containing Salicylates

Aspirin (acetylsalicylic acid)
Salicylic acid
Methyl Salicylate (Oil of Wintergreen)
Sodium Salicylate
Diflunisal

Unwanted Effects

Salicylates can cause various metabolic changes such as changes in acid-base balance and electrolyte balance, which can, in turn, alter blood pressure and heart rate. However, mechanism of action seems to be as follows in respect of the thyroid hormones.

Thyroxine hormone binds to certain hormones in the blood called TBG Proteins. However, thyroxine can be displaced from TBG Proteins by certain substances such as drugs. In addition, if the amount of TBG Protein changes, this will alter the amount of thyroxine in the blood.

Some products used to treat acne and skin disorders contain Salicylates, but since these are used topically as are Oil of Wintergreen (typically found in Relax, Deep Heat etc.) we do not know what effects these have on the thyroid.

Drugs which may reduce the effectiveness of Levothyroxine

Proton pump inhibitors
Oestrogens
Statins

Other Drugs and Chemicals

- Oestrogen - Any oestrogen raises the levels although thyroid activity is unchanged. This could make your levels look within the normal range, whereas they are really below it. 
   Oestrogen provides more of the transport protein, making the hormone inactive. After starting on any oestrogen therapy, a woman should always have TSH tested to see if the oestrogen is having an impact on overall TSH and thyroid function and might require a dosage adjustment.

- Prempak C/Premanin etc - HRT made from mares urine and interferes with thyroid availability.
- Amiodarone hydrochloride - This is an anti-arrhythmic and should not be given to patients with thyroid disorders. If you are on this drug you should be regularly tested for thyroid disease.
- Insulin and similar oral hypoglycaemic drugs - Given for diabetes, this can reduce the effectiveness of thyroid hormone. Be sure your doctor knows you are on one before prescribing the other. If you are on insulin or an oral hypoglycaemic, you should be closely watched during the initiation of thyroid replacement hormone.
- Antacids - Most of these contain aluminium hydroxide and is well known for reducing the body's ability to absorb thyroxine.
- Cholesterol-Lowering drugs (statins) - These drugs bind thyroid hormones, and a minimum of four to five hours should elapse between taking these drugs and thyroid hormones.
- Oxymetazoline Hydrochloride - a sympathomimetic, an alpha-adrenoreceptor stimulant used in nasal decongestants. This drug works indirectly through the release of Noradrenaline from sympathetic nerve endings. This drug should have a warning on to administer with caution to patients with heart, kidney and thyroid disorders, diabetes and hypertension.

Hypothyroidism Contra-Indicated on the Patient Information Leaflet (PIL)

Dihydrocodeine Tartrate (Dihydrocodeine 120mg modified-release tablets) - Dihydrocodeine Tartrate (Dye-hi-droh-koh-deen tar-trate) is a medicine which is used in a number of conditions - an example is neuropathic pain.

PLEASE TAKE YOUR DOCTOR’S ADVICE BEFORE STOPPING ANY MEDICATION!