



Green = in a healthy person this is the preferred route

Dotted line = extreme low TSH (because of severe iodine deficiency) stimulates this route

NIS = sodium iodine symporter (or just symporter), this system pumps sodium out of the cell and at the same time, iodine into the cell. NIS uses, among other things, hydrogen peroxide (= H₂O₂) <http://en.wikipedia.org/wiki/Thyroid>

Na = natrium = sodium

Tyrosine = an amino acid

MIT = Tyrosine with one iodide attached to it <http://en.wikipedia.org/wiki/Monoiodotyrosine>, this is not T1

DIT = Tyrosine with two iodide attached to it <http://en.wikipedia.org/wiki/Diiodotyrosine>, this is not T2

TPO = Thyroperoxidase (TPO): this is an enzyme that attaches one iodide to tyrosine or MIT to resp create MIT or DIT http://en.wikipedia.org/wiki/Thyroid_peroxidase
This process releases hydrogen peroxide (= H₂O₂) (which can be used by the NIS). In the schema, the hydrogen peroxide is indicated by a red circle.
<http://en.wikipedia.org/wiki/Thyroid>
Methimazole blocks TPO: no T3 or T4 is produced.

* = T3 is made from one MIT plus one DIT

** = Two DIT make one T4

*** = T4 is converted into T3 in all the cells in the body (periphery), dit is done by an enzyme called “iodothyronine deiodinase”. This enzyme snips an iodide from T4 and makes it into T3. This enzyme contains selenium.
http://en.wikipedia.org/wiki/Iodothyronine_deiodinase

T3 = triiodothyronine http://en.wikipedia.org/wiki/Thyroid_hormone, this is two tyrosine molecules with three iodides attached to it.

T4 = thyroxine http://en.wikipedia.org/wiki/Thyroid_hormone, this is two tyrosine molecules with four iodides attached to it.
<http://en.wikipedia.org/wiki/Thyroxine>

TSH = Thyroid stimulating hormone, this stimulates the processes indicated with arrows running from TSH in the schema