**Biochem #2 sheet note**

* Iodine exists in :

-salt

-tomato

-sea food //في الطحالب وفي نسيم البحر

* **Iodine trapping**: *thyroid gland takes most of the iodine in the blood “more than 90%”*
* *people who live in mountains have hypothyroidism and goiter because of low level of iodine*
* Fusion of colloid droplets with lysosomes is followed by hydrolysis and release of thyroid hormones stimulated by TSH

so **TSH stimulate**:

- **Growth of thyroid gland**

**-The uptake of hormones**

**- Synthesis of T3 & T4**

* Regarding hormones we are always looking for the free hormone which is not bounded to protein ”physiologically active”.
* The free fraction is responsible for hormone action
* Deiodination occurs by deiodinases in the liver , kidney , thyroid , pituitary gland, brain , brown fat , placenta but sulfation , deiodination **occurs mainly in the liver.**
* TSH hormone **works mainly** on **cAMP/PKA**
* **TSH tests for hyper/hypothyrodism are done after birth.**
* **The main function of thyroid is to increase basal metabolic rate >> ATP production and COP and increase the sensitivity of catecholamines so increase their function.**
* **At high conc. It works on Ca+2/IP3/TAG/PKC/ calcium calmodulin as well as on cAMP/PKA**
* The main symptom of hyperthyroidism is heat intolerance: always feels hot, in case of hypothyroidism he will always feel cold ( cold intolerance).