

THYROID OXIDASE DEFICIENCY – 2A

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- thyroid hormones (T_4 , T_3) are made by the follicular cells of the thyroid gland (Figure 1)
- the key enzyme in the processing (oxidation) of iodine and formation of thyroid hormones is peroxidase
- lack of peroxidase in the disease means that iodine cannot be oxidized nor attached for making thyroid hormone
- lack of thyroid hormone in the blood causes the brain to send out unabated signals for the gland to make more thyroid hormone, which of course is not possible (Figure 2)
- lack of thyroid hormone production in the disease requires hormone replacement therapy
- thyroid hormone functions:
 - growth
 - maintaining body's basal metabolic rate (BMR)
 - heat production
 - promoting sweating
- consequences of hypothyroidism (low blood thyroid concentration)
 - low BMR → weight gain
 - sluggishness, decreased heart rate
 - intolerance to cold
 - dry skin

