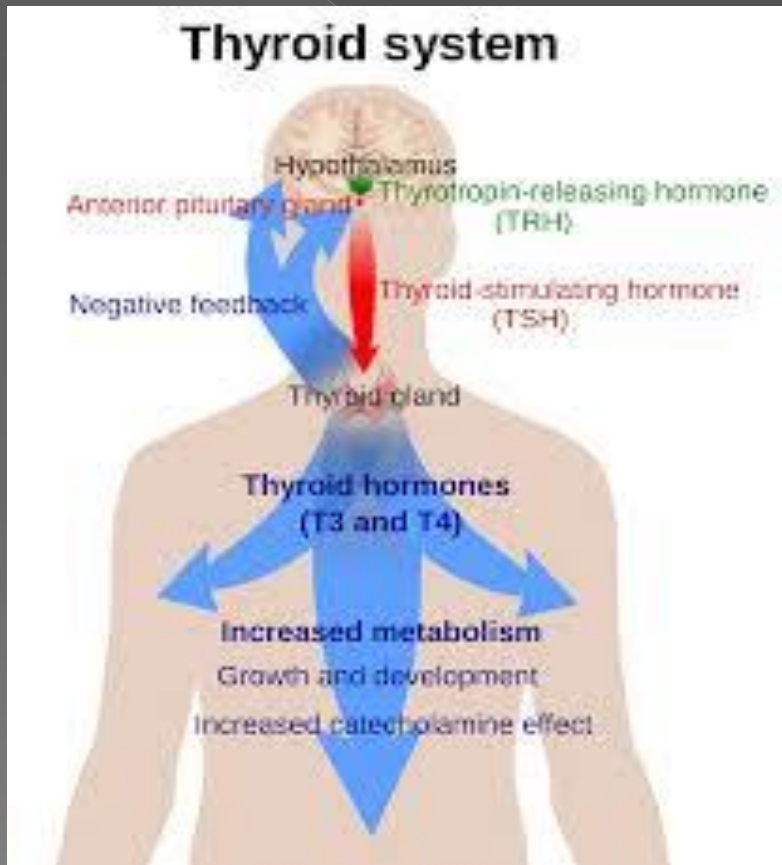


# THYROID FUNCTION

## FACTS AND MYTHS



# THYROID SYSTEM



**T4** – inactive form of thyroid hormone

**T4** converts to **T3**

**T3** – active form of thyroid hormone

**TSH** – pituitary hormone release by a pituitary gland in order to regulate the release of thyroid hormones by the thyroid gland

# HYPERTHYROIDISM

- ◉ EXCESSIVE PRODUCTION OF T4 OR T3 OR BOTH
- ◉ USUALLY DUE TO HASHIMOTO THYROIDITIS (AUTOIMMUNE CONDITION) OR GRAVE'S DISEASE

# HYPERTHYROIDISM



- EXCESSIVE WEIGHT LOSS
- PALPITATIONS
- ANXIETY
- INSOMNIA
- BULGING EYES
- HAIR LOSS

# HYPERTHYROIDISM

- ◉ BLOOD TEST : T4 ↑ T3 ↑ TSH ↓
- ◉ TREATMENT: MEDICATION, SURGERY, IODINE THERAPY OR SYMPTOMATIC
- ◉ OFTEN “BURNS ITSELF OUT” - BECOMES HYPOTHYROIDISM
- ◉ MAY BE MINIMALLY SYMPTOMATIC AND ESCAPE DETECTION

# I have no energy...

MY MOOD IS LOW

I ACHE ALL OVER THE BODY

My skin is dry, my nails are brittle

I am losing the edges of the my eyebrows



# HYPOTHYROIDISM

- ◉ DECREASED PRODUCTION OF THYROID HORMONE BY THE THYROID GLAND
- ◉ MAY BE PRECEDED BY HYPERTHYROIDISM
- ◉ STARTS GRADUALLY
- ◉ WEAKNESS, WEIGHT GAIN , FEELING COLD , DEPRESSION, SLEEPING ALL THE TIME, LOSING HAIR, LOSING EDGES OF EYEBROWS, SLOW PULSE , LOW BLOOD PRESSURE, CONSTIPATION

# HYPOTHYROIDISM

- BLOOD TEST : T3 ↓ T4 ↓ TSH ↑
- TREATMENT : REPLACEMENT OF LOW HORMONE LEVELS



# HYPOTHYROIDISM

T4

- **SYNTHROID**
- **LEVOXYL**
- **LEVOTHROID**
- **LEVOTHYROXINE**

T3+T4

- **ARMOUR THYROID**
- **NATURE THROID**
  - **NP THYROID**
- **COMPOUNDED T3/T4**

T3

- **CYTOMEL**

# HYPOTHYROIDISM

- MONITORING THE TREATMENT
- TAKES 3-4 WEEKS FOR THE MEDICATION TO START WORKING
- MUST BE TAKEN FIRST THING IN THE MORNING ON THE EMPTY STOMACH
- BLOOD TEST NEEDS TO BE DONE 4 HOURS AFTER THE LAST MORNING DOSE
- THE GOAL IS TO BRING THE LEVELS OF T3 TO UPPER LIMIT OF NORMAL

# HYPOTHYROIDISM

PATIENT X:

*"I AM STILL VERY TIRED , LOSING HAIR, HAVE DIFFICULTY CONTROLLING MY WEIGHT, FEEL COLD ALL THE TIME..."*

BLOOD TEST:

FREE T3      2.5 (2.3 – 4.2)

FREE T4      1.1 (0.8 – 1.8)

TSH            2.0 (0.4 – 4.5)



# HYPOTHYROIDISM

## OPTIMIZATION OF T3 LEVEL RESULTS IN

- INCREASED ENERGY LEVEL
- INCREASED PHYSICAL ENDURANCE
- SUCCESS IN WEIGHT LOSS EFFORTS
- IMPROVEMENT OF DEPRESSIVE SYMPTOMS
- RESTORED EYE LASHES AND EYEBROWS
- REGAINING OF NORMAL BOWEL MOVEMENTS
- DECREASE IN ACHES AND PAINS

# OLD AGE OR T3 DEFICIENCY?



LIFE CAN BE FUN AGAIN!