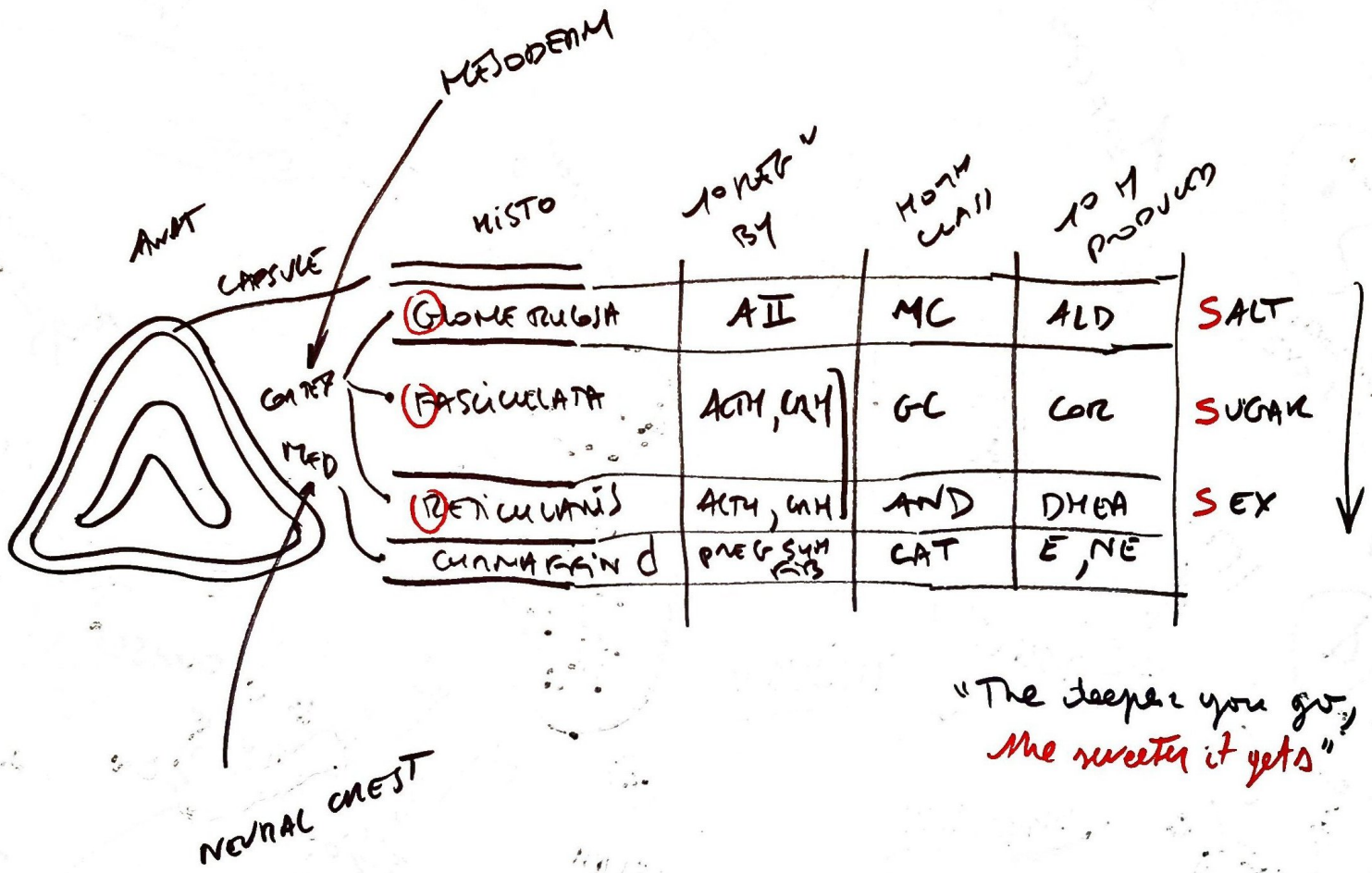
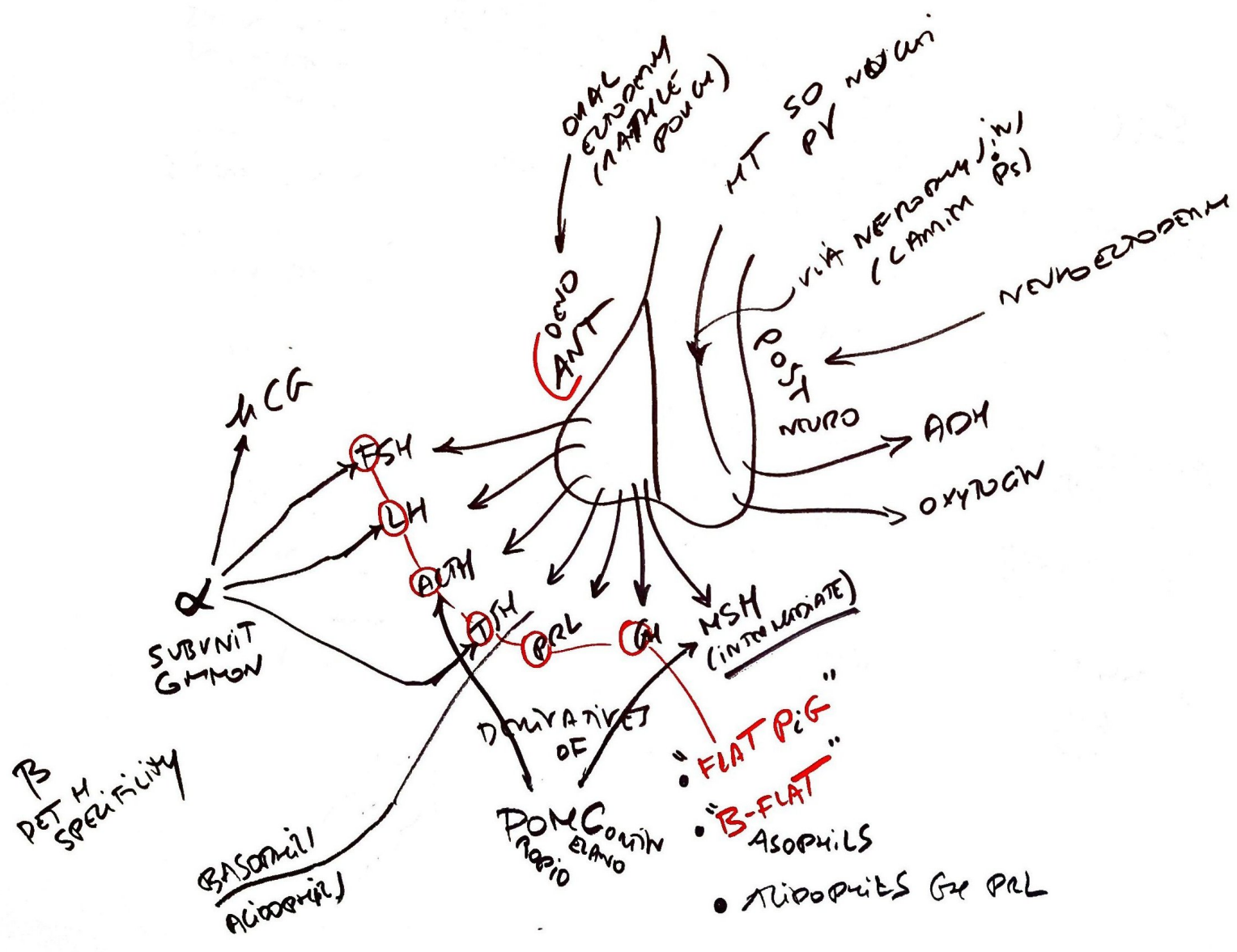


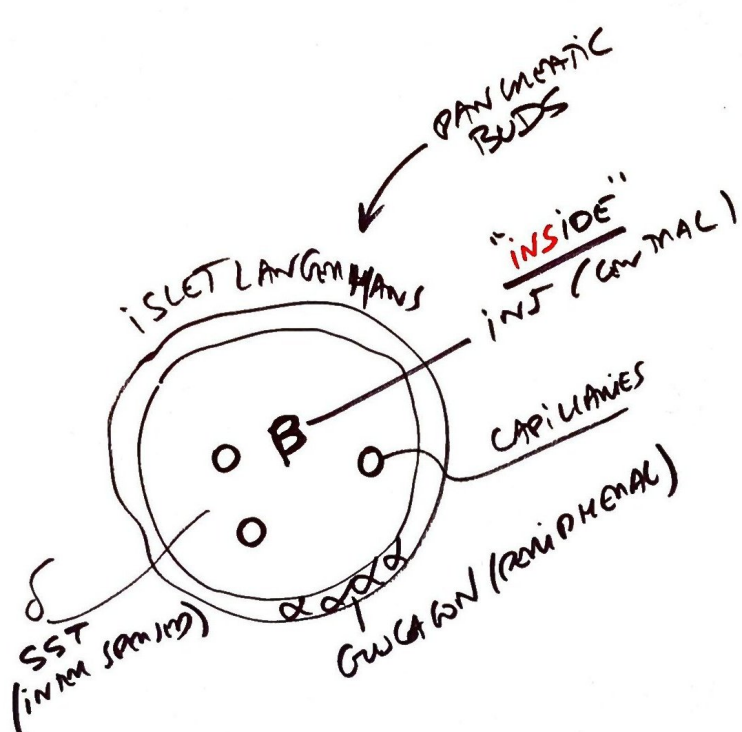
ADRENAL  
CORTEX  
&  
MEDULLA



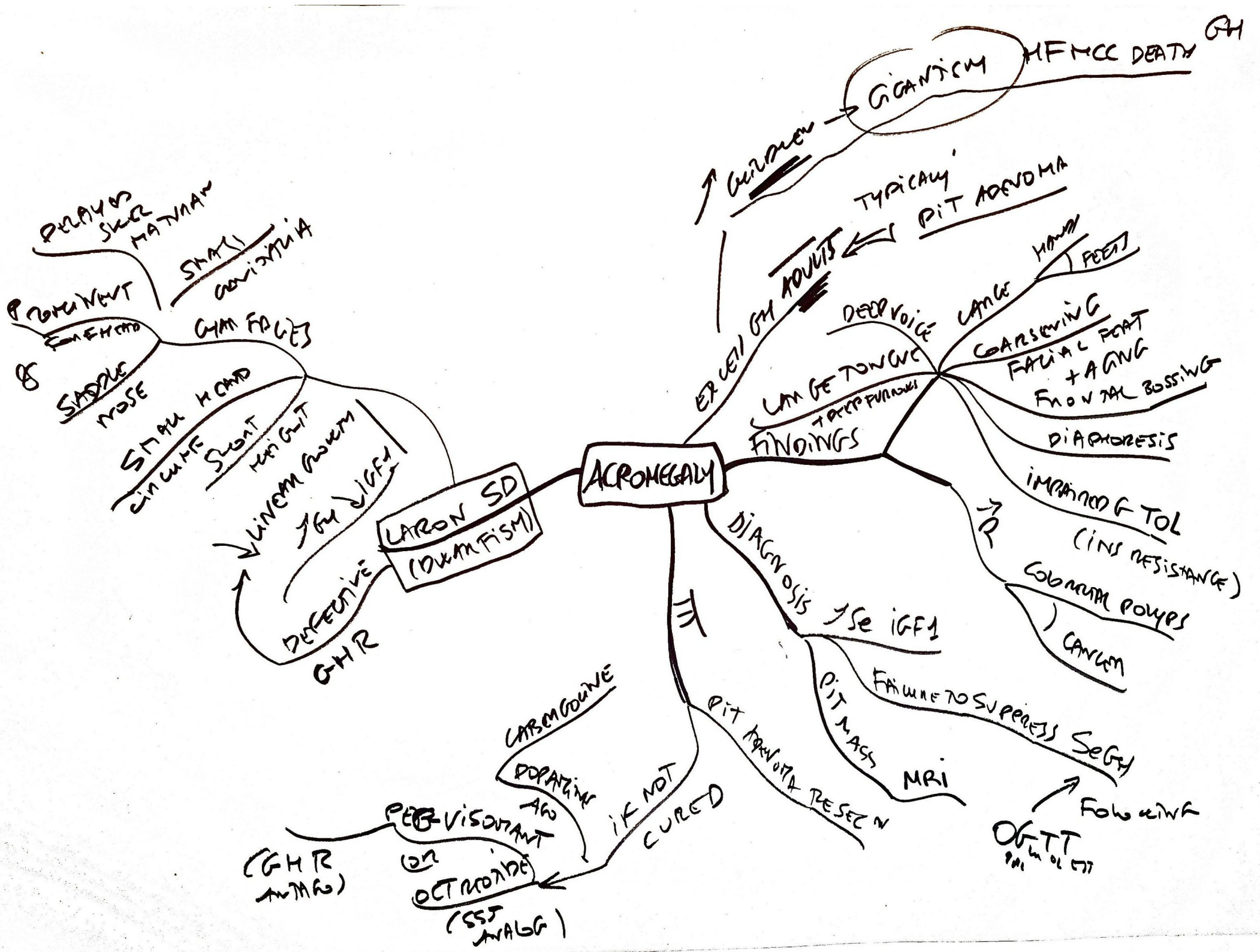
PIT



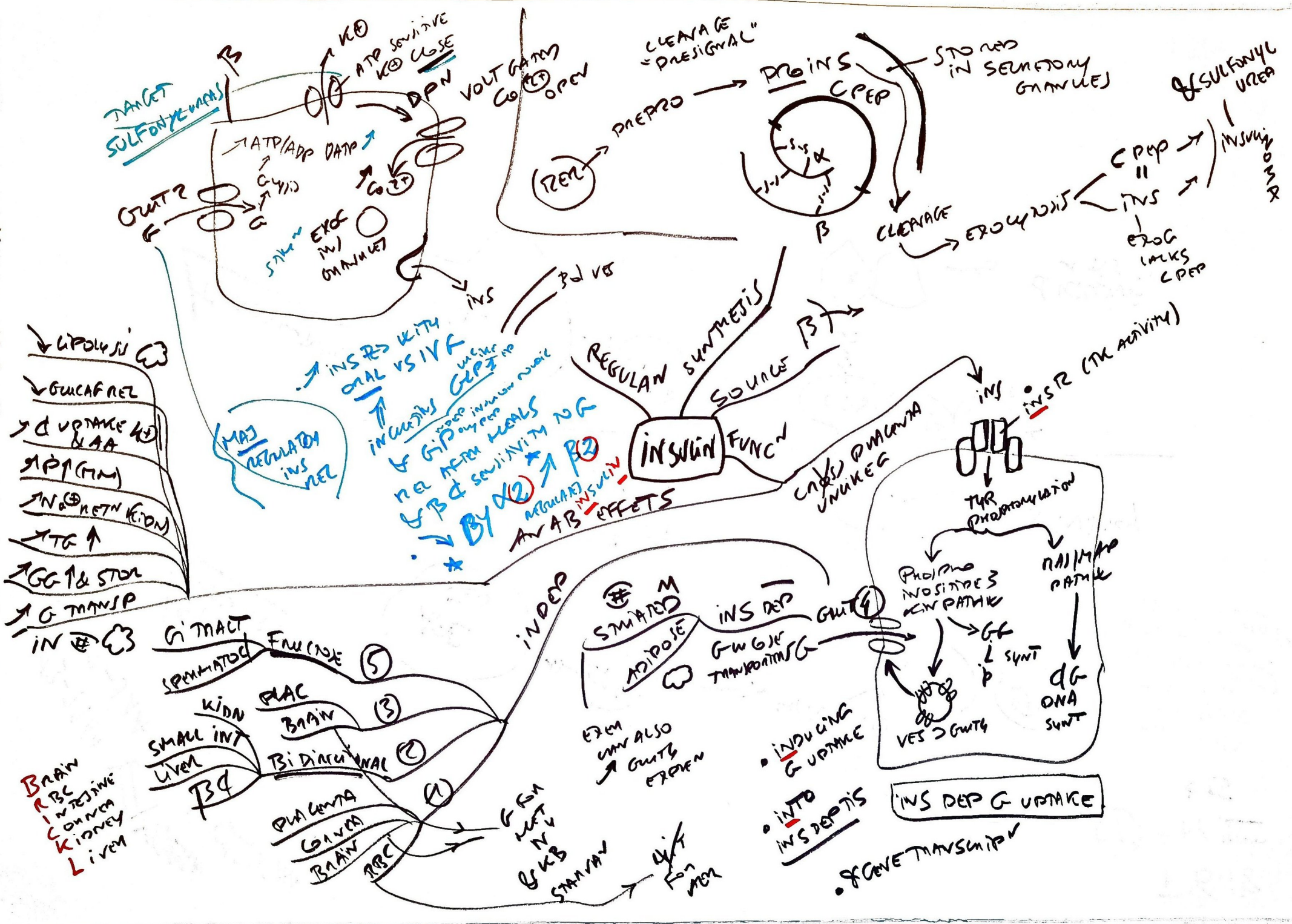
ENDOC  
PANC  
& TYPES





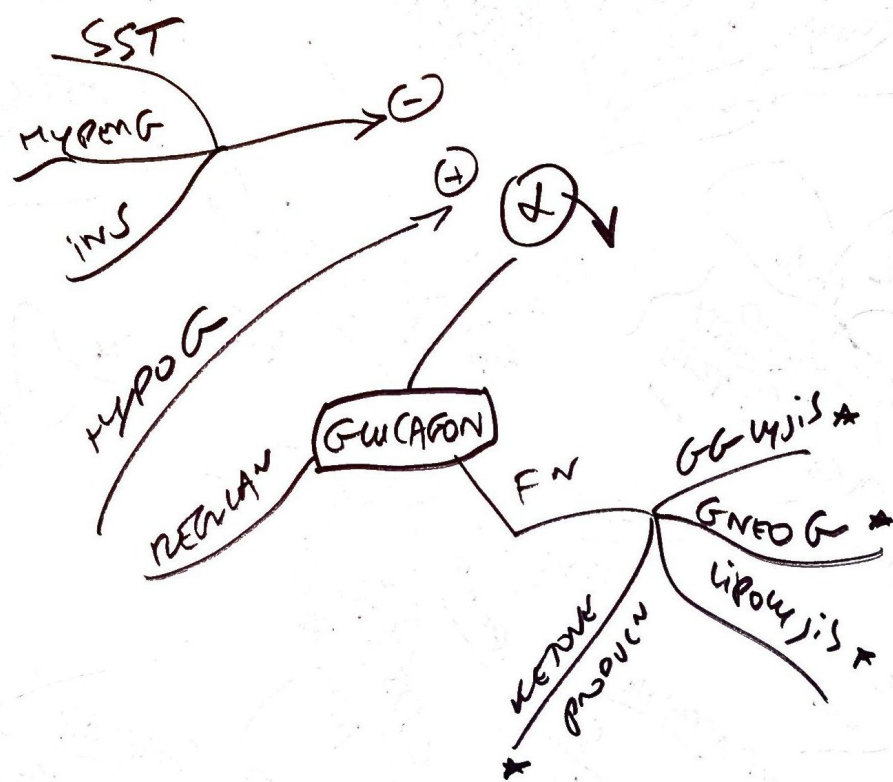




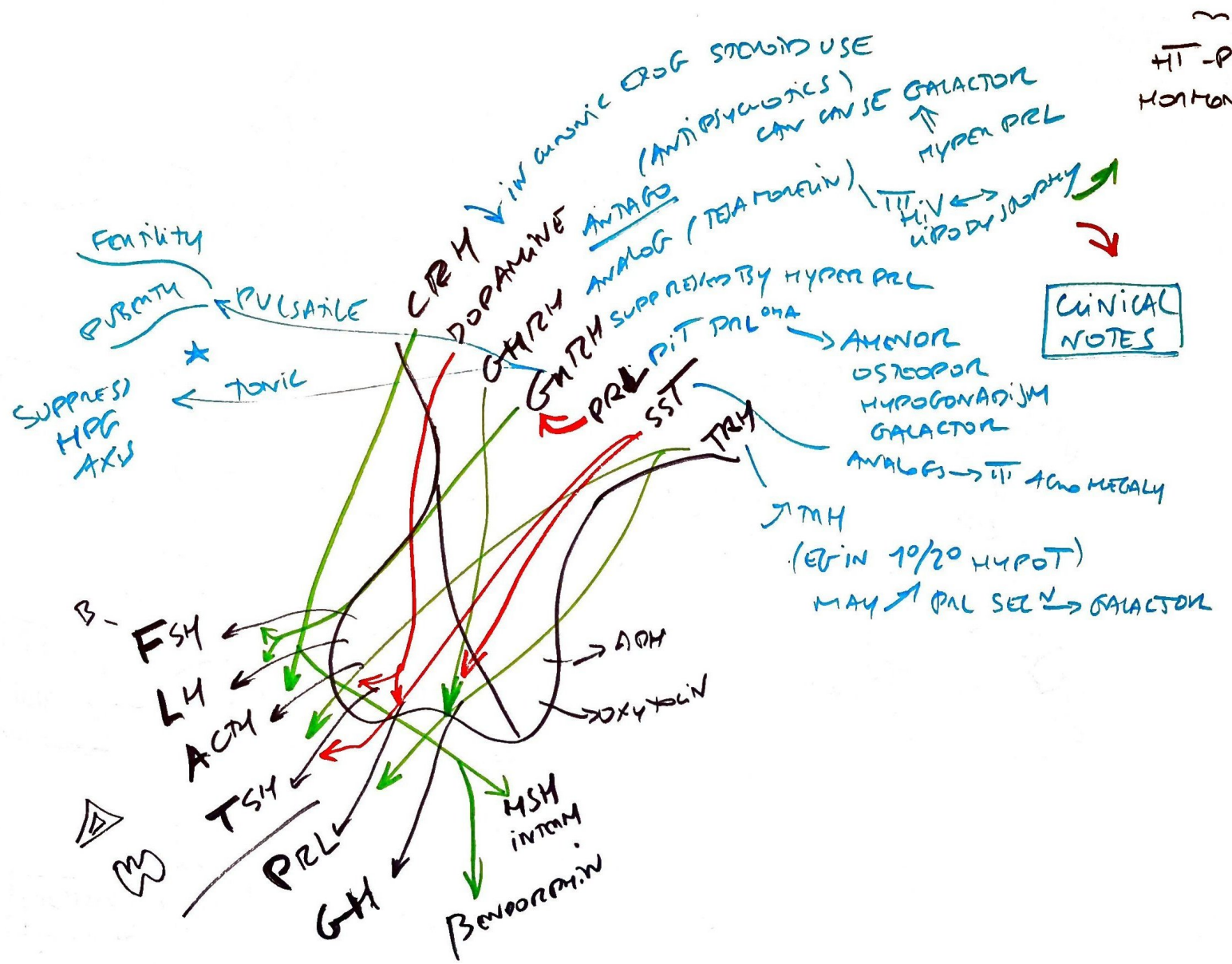


- ↓ LIPOLYSIS
- ↓ GLUCAGON
- ↑ UPTAKE
- ↑ APP (TTC)
- ↑ IN (KIDNEY)
- ↑ TGC
- ↑ GGT & STOR
- ↑ G TRANS

BRAIN  
RBC  
LIVER  
KIDNEY



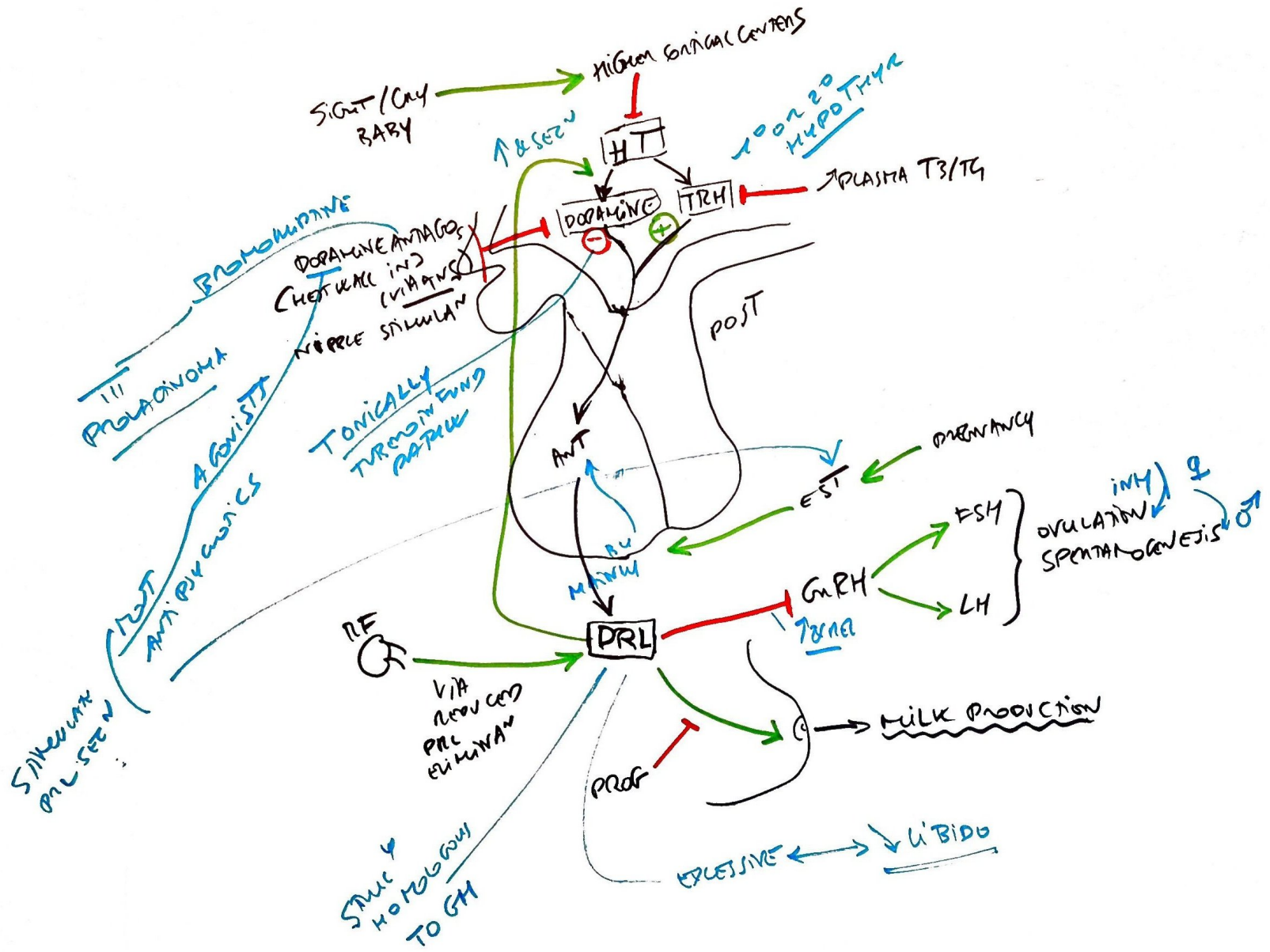






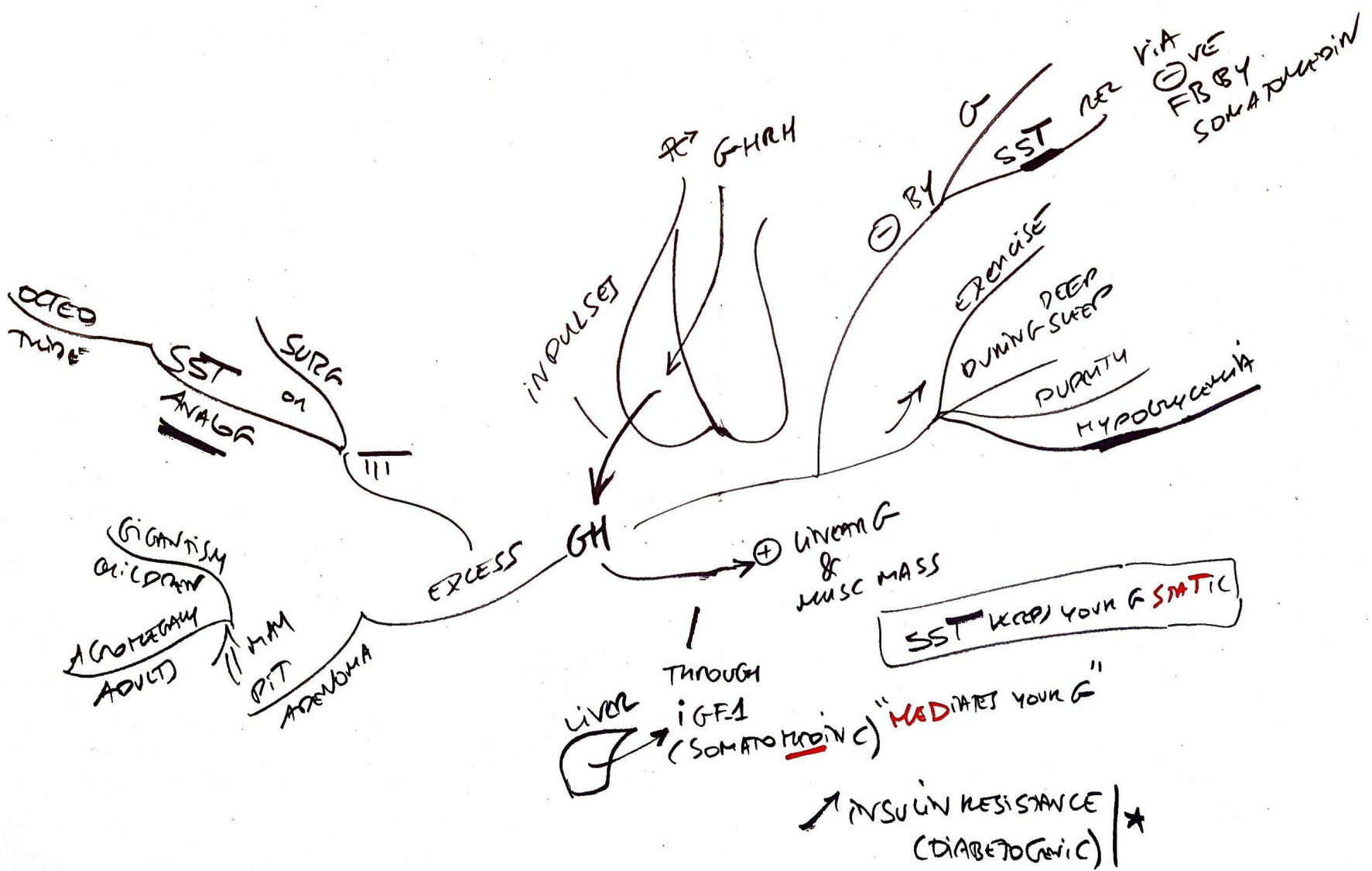
~~SIG & IS~~

PRL

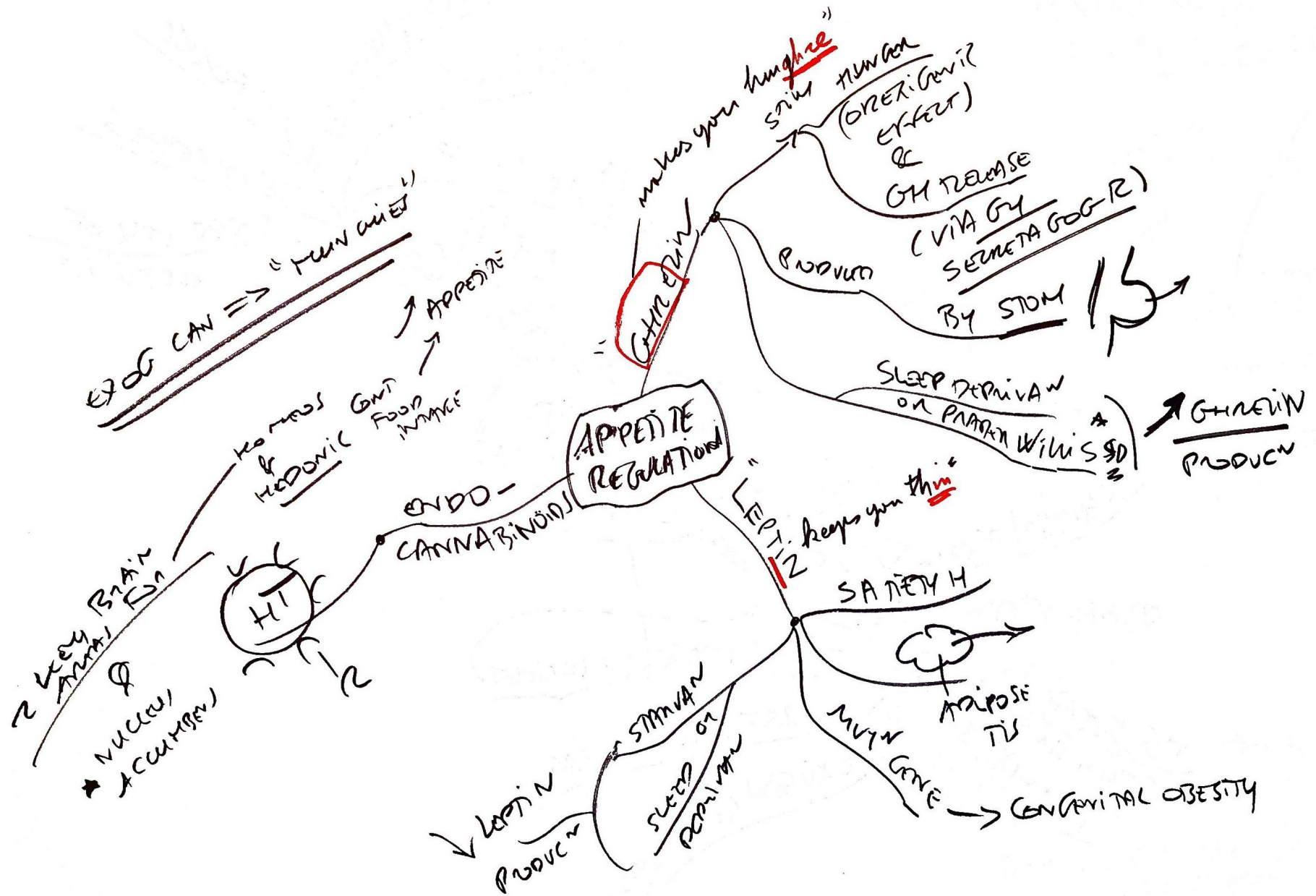


Growth Hormone & Somatotropin

GH  
SOMATOTROPIN

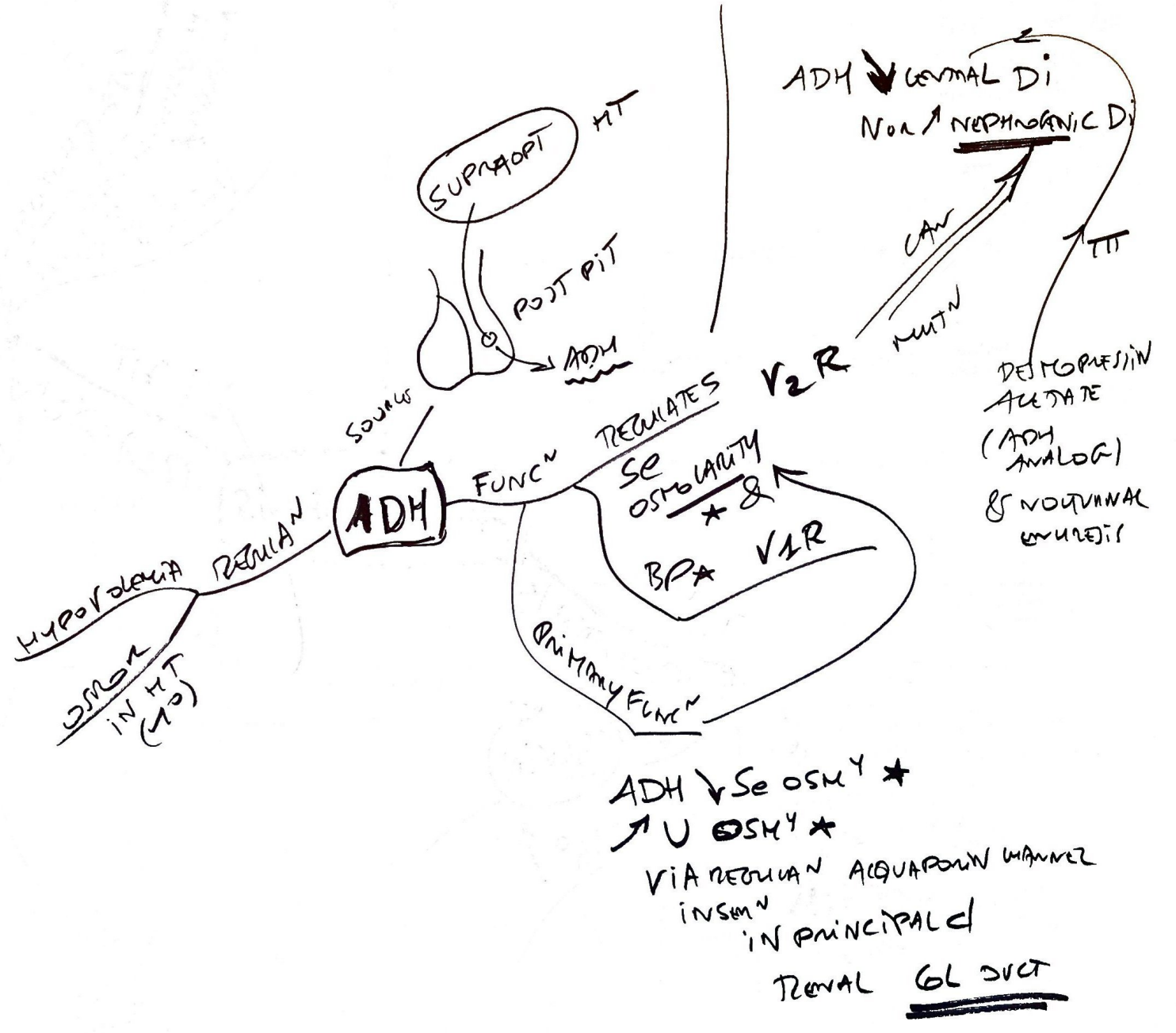


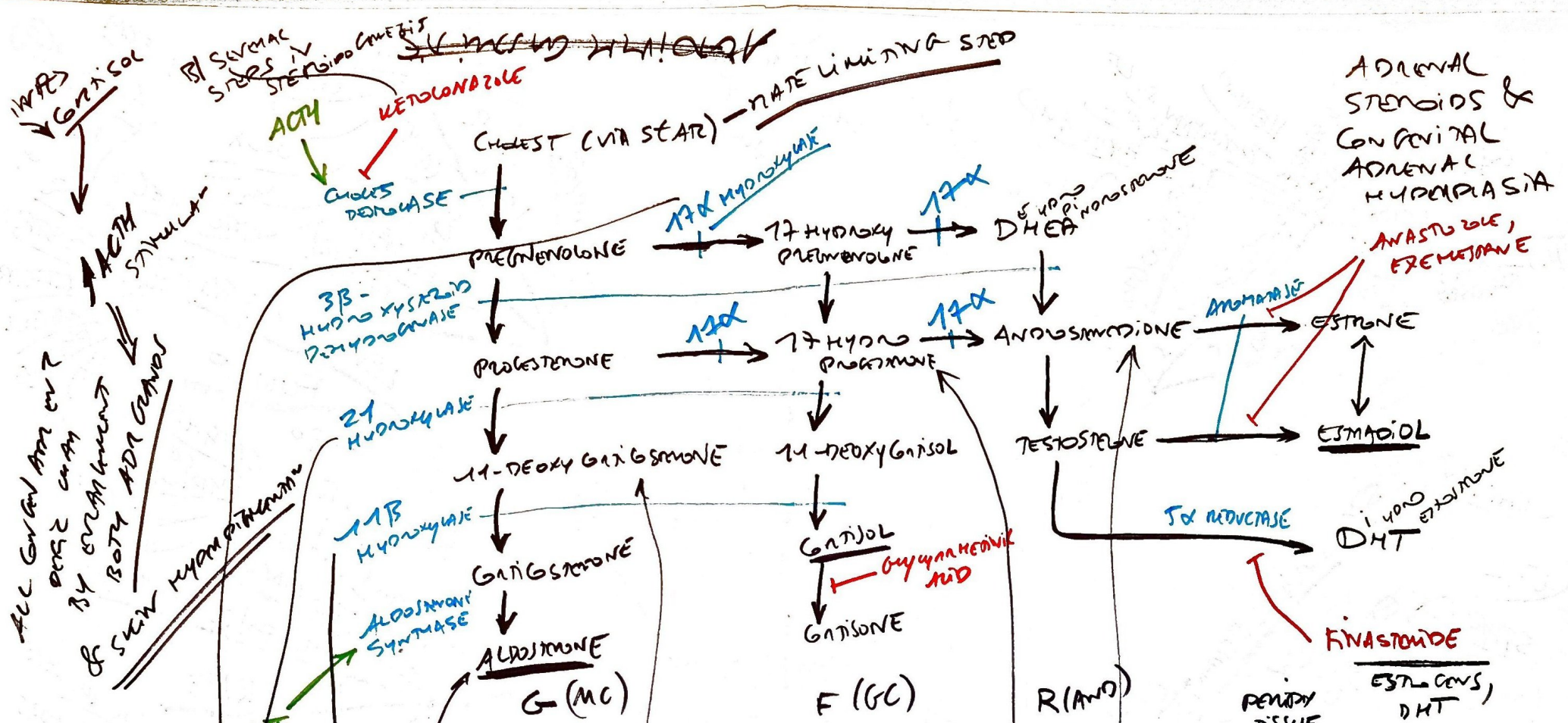
~~HYPOTHALAMIC GASTROINTESTINALS~~





~~General overview of endocrine system~~





Enzyme	MC	CORTISOL	SEX H	TSP	[ACT]	LARS	PRENATAL	POSTNATAL
17α	↑	↓	↓	↑	↓	↓	XY: AMBIGUOUS GENITALIA XX: LACKS 2° SEXUAL ORG	XY: AMBIGUOUS GENITALIA XX: LACKS 2° SEXUAL ORG
21	↓	↓	↑	↓	↑	↑	MC PRESENT IN INFANCY ON WITHHOOD (SALT WASTING)	MC PRESENT IN INFANCY ON WITHHOOD (SALT WASTING)
11β	↓	↓	↑	↑	↓	↓	XX: VULVAR XX: VULVAR	XX: VULVAR XX: VULVAR

ADRENAL STEROIDS & CONGENITAL ADRENAL HYPERPLASIA

ANASTROLE, FENASTROLE

FINASTROLE

RENIN TISSUE

ESTRONE, DHT

ALL GENITAL AND ENZ BY ENZ ENZ BOTH ADG GENES & SKIN HYPERPIGMENTATION

BY SEVERAL STEROID STEROID GENES

CHOLEST (VIA SEAR) - RATE LIMITING STEP

ACTH stimulates CHOLEST DEHYDROGENASE

3β-HYDROXYSTEROID DEHYDROGENASE

21-HYDROXYLASE

11β-HYDROXYLASE

ALDOSTERONE SYNTHASE

17α-HYDROXYLASE

17α-HYDROXYLASE

17β-HYDROXYLASE

17α-HYDROXYLASE

17β-HYDROXYLASE

5α-REDUCTASE

5α-REDUCTASE

5α-REDUCTASE

5α-REDUCTASE

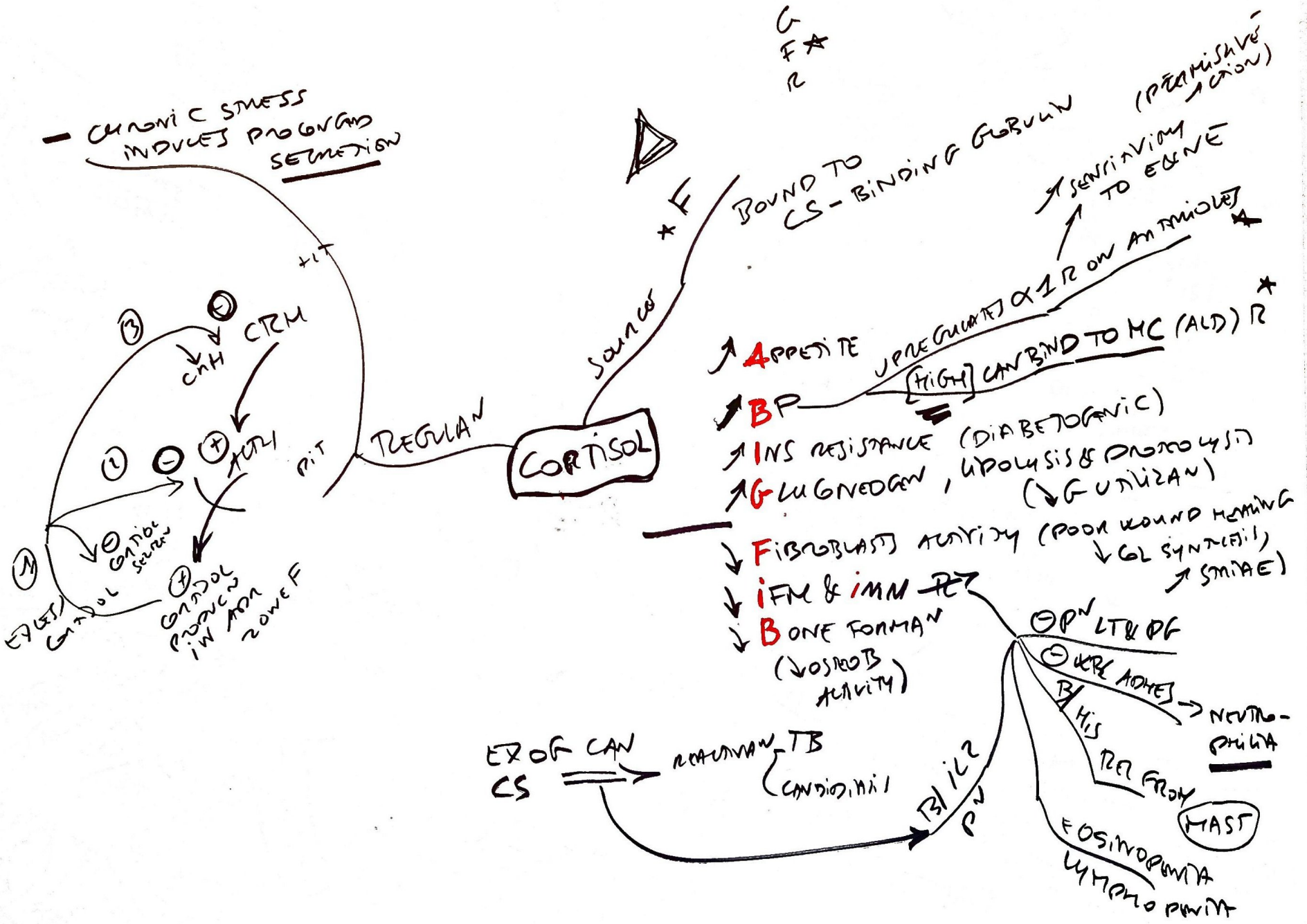
5α-REDUCTASE

5α-REDUCTASE

5α-REDUCTASE



~~Stress~~



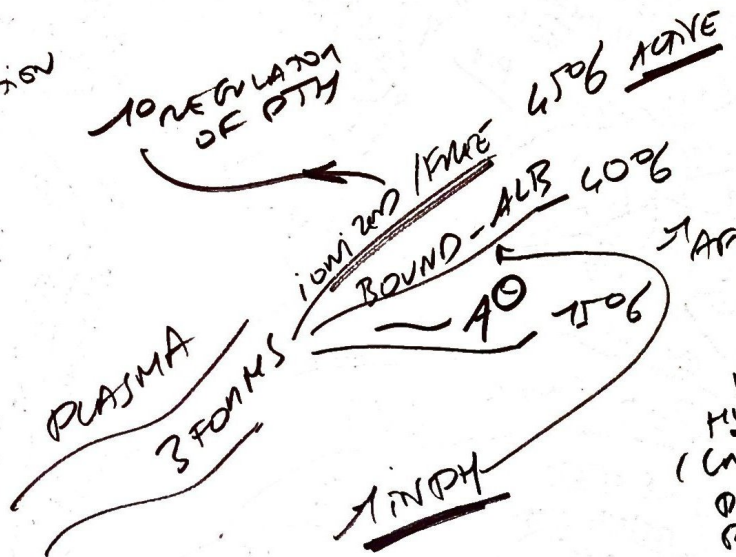


~~NEW MIA~~ MENINGES ~~SPINDLE CELL SARCOMA~~

~~CHONDROSARCOMA~~

- $\uparrow$  IN IPY
- ALTHOUGH PTM SECRETION
- $\uparrow$  ALB NOT

↑ REGULATION OF PTM

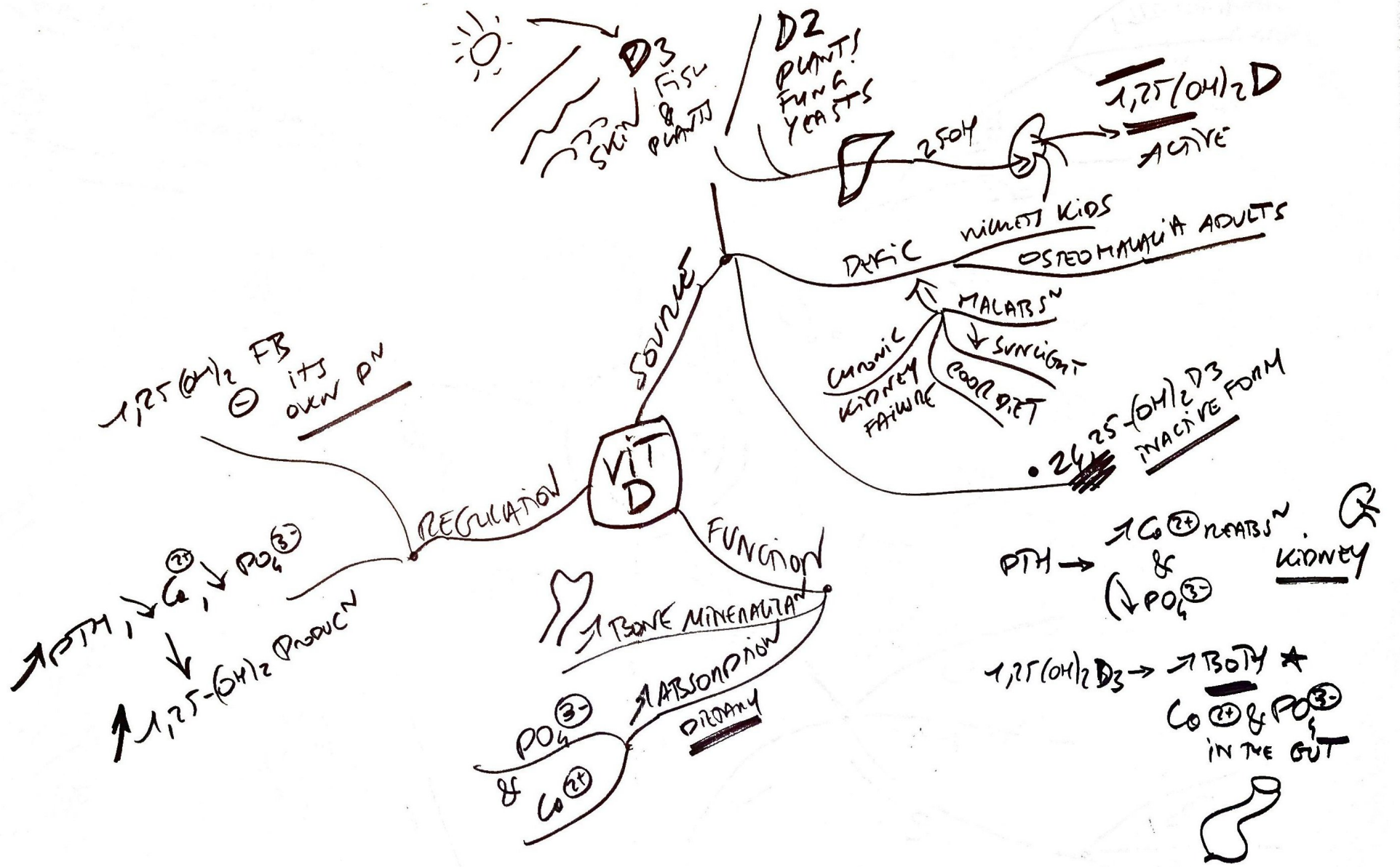


↑ AFFINITY (↑  $\ominus$  VE CHANGE)

↓ HYPOCa (CRAMPS, PAIN, PARATHYREO CALCOPROPH SPASM)

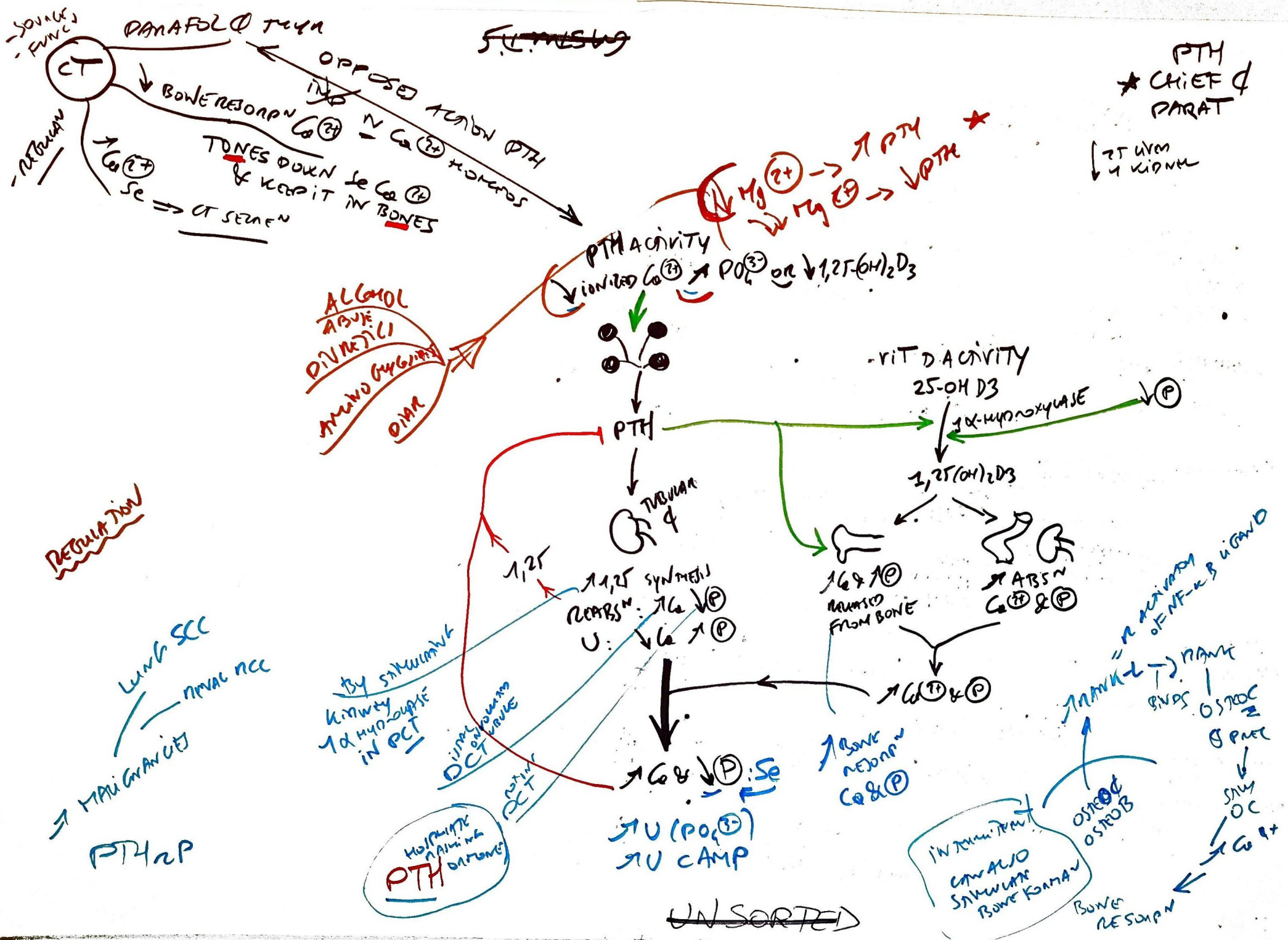
Ca<sup>2+</sup> HOMEOSTASIS

NEW AND MENINGES ~~ON THE OTHER SIDE IN STUDY~~



~~HISTORY~~  
~~12/11/2018~~





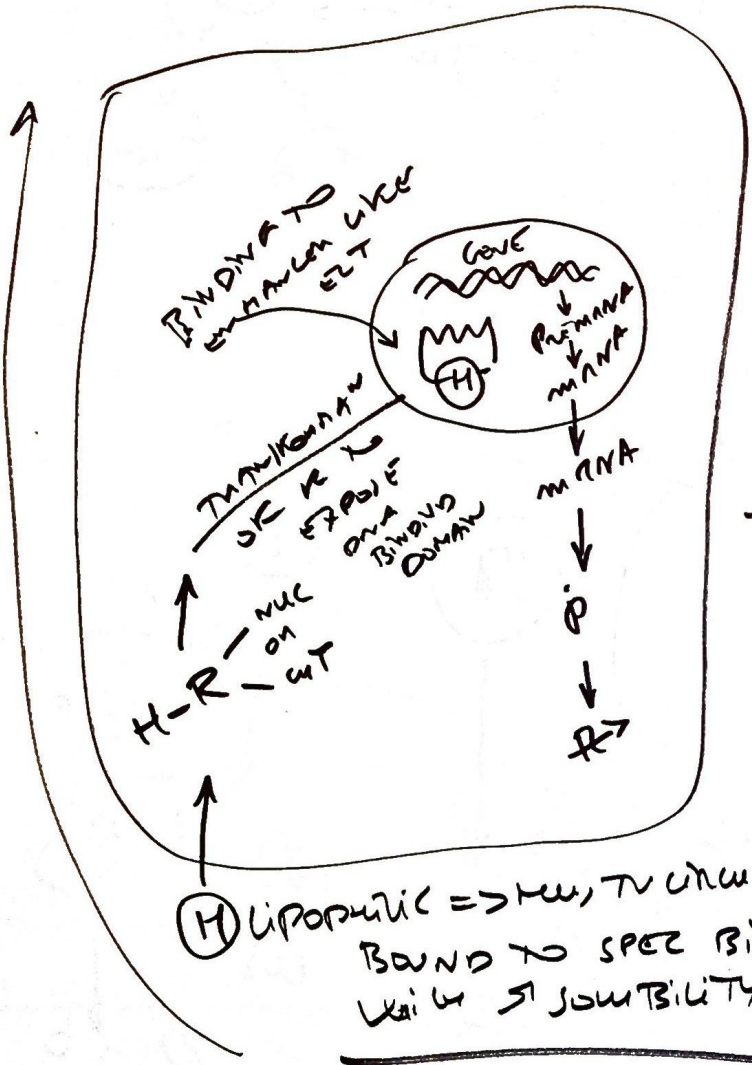




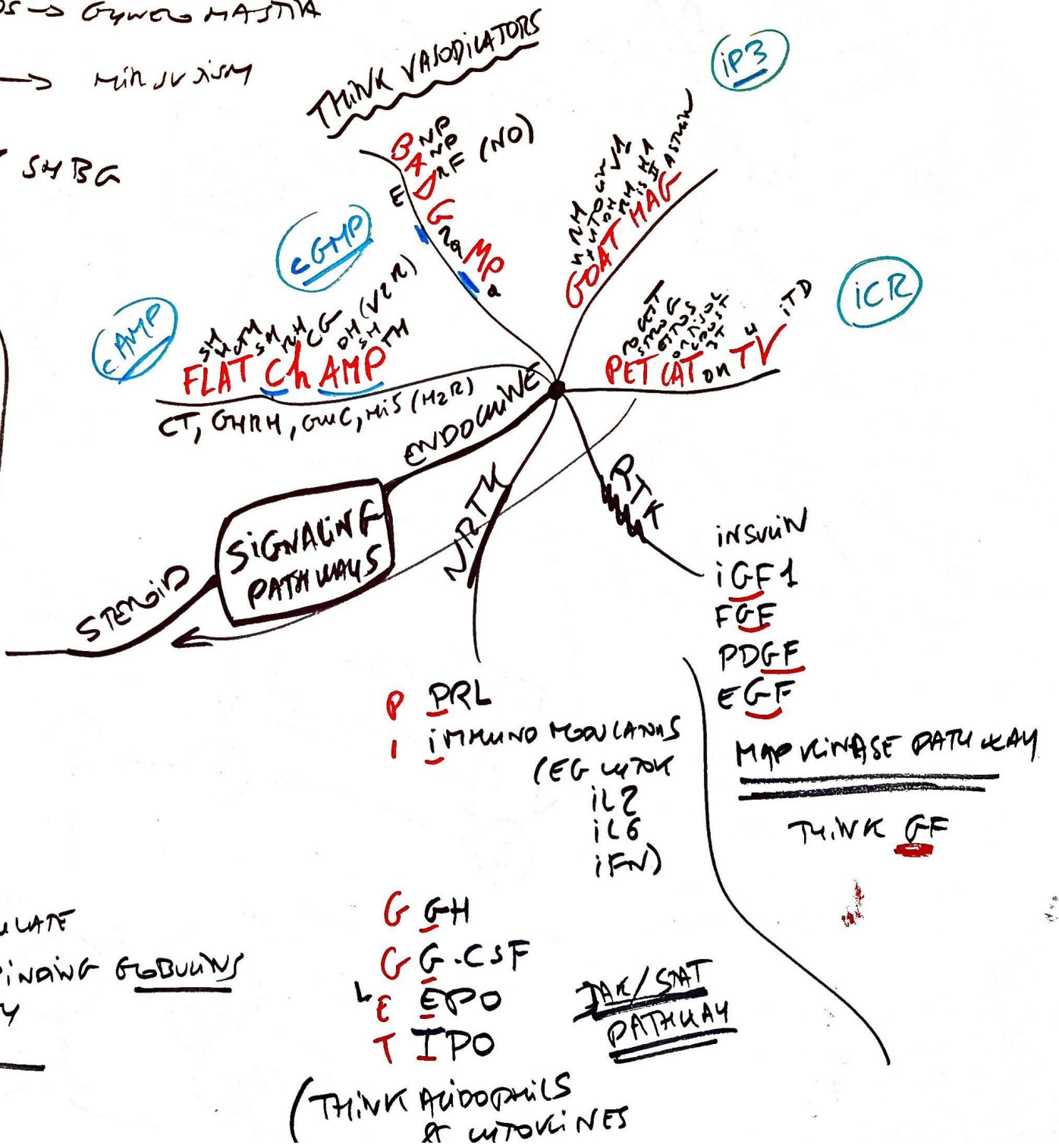
TR.5

♂ → SHBG LOW → TESTOS → GYNOMA MASTIA  
 ♀ → SHBG HIGH → MINORITY

OCP, PREGNANCY → SHBG



① Lipophilic ⇒ can circulate bound to SPEC BINDING GLOBULINS with STABILITY



(THINK PHORBOLS & CYTOKINES)



- 1 24-H U FREE CORTISOL -  
 2 LATE NIGHT SALIV CORTISOL NO  
 3 OR INADEQUATE SUPPRESSION ON 1mg DEXAMETHASONE TEST OVERNIGHT LOW DOSE

MEASURE ACTH

SUPPRESSION

ELEVATED

ACTH-INDEP CUSHING SD

ACTH DEP CUS SD

- SUBJECT
- EXOG GC
  - ADX TVM (CONSIDER ADX CT TO CONFIRM)

HIGH DOSE DST

CRH STIMULAN TEST

NO SUPPRESSION

ADAPTABLE SUP CUS D

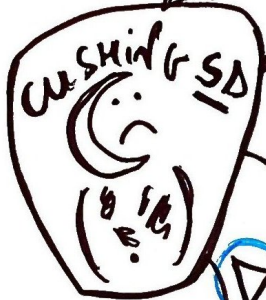
ACTH LGR CUS D

NO ACTH & GR ECTOPIC ACTH SEC

CT CHEST/ABD/PELVIS

MRI PIT

CT CHEST/ABD/PELVIS

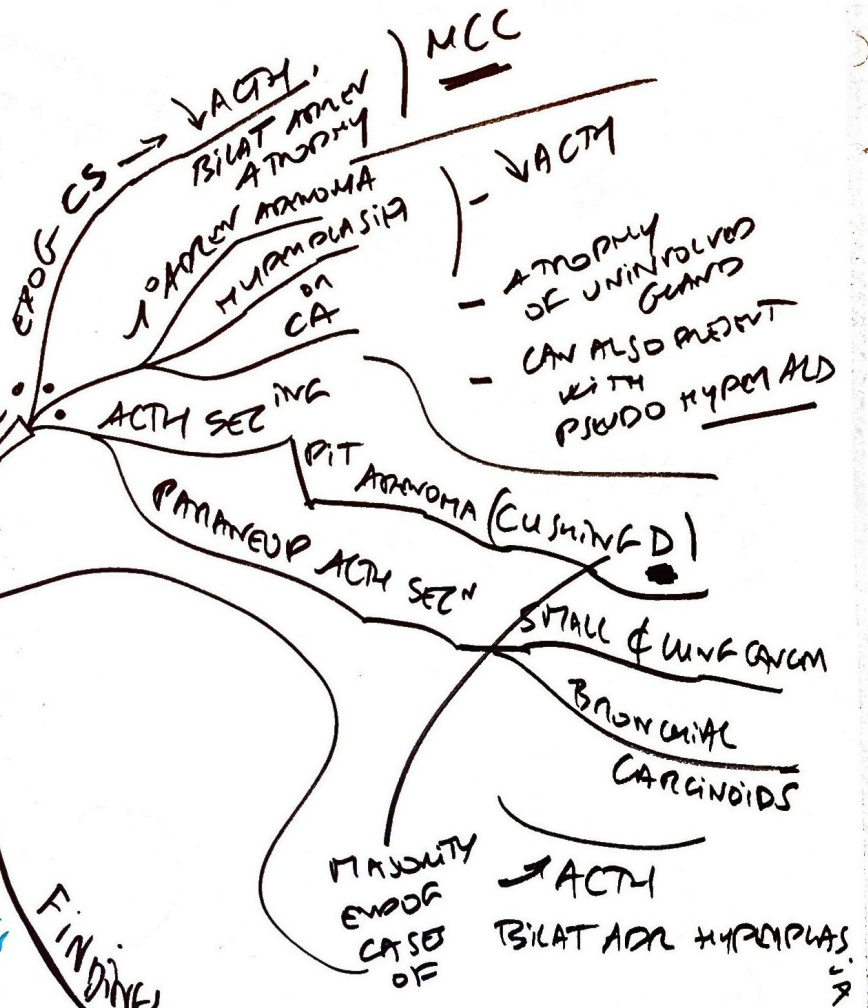


SCREENING TESTS

FINDINGS

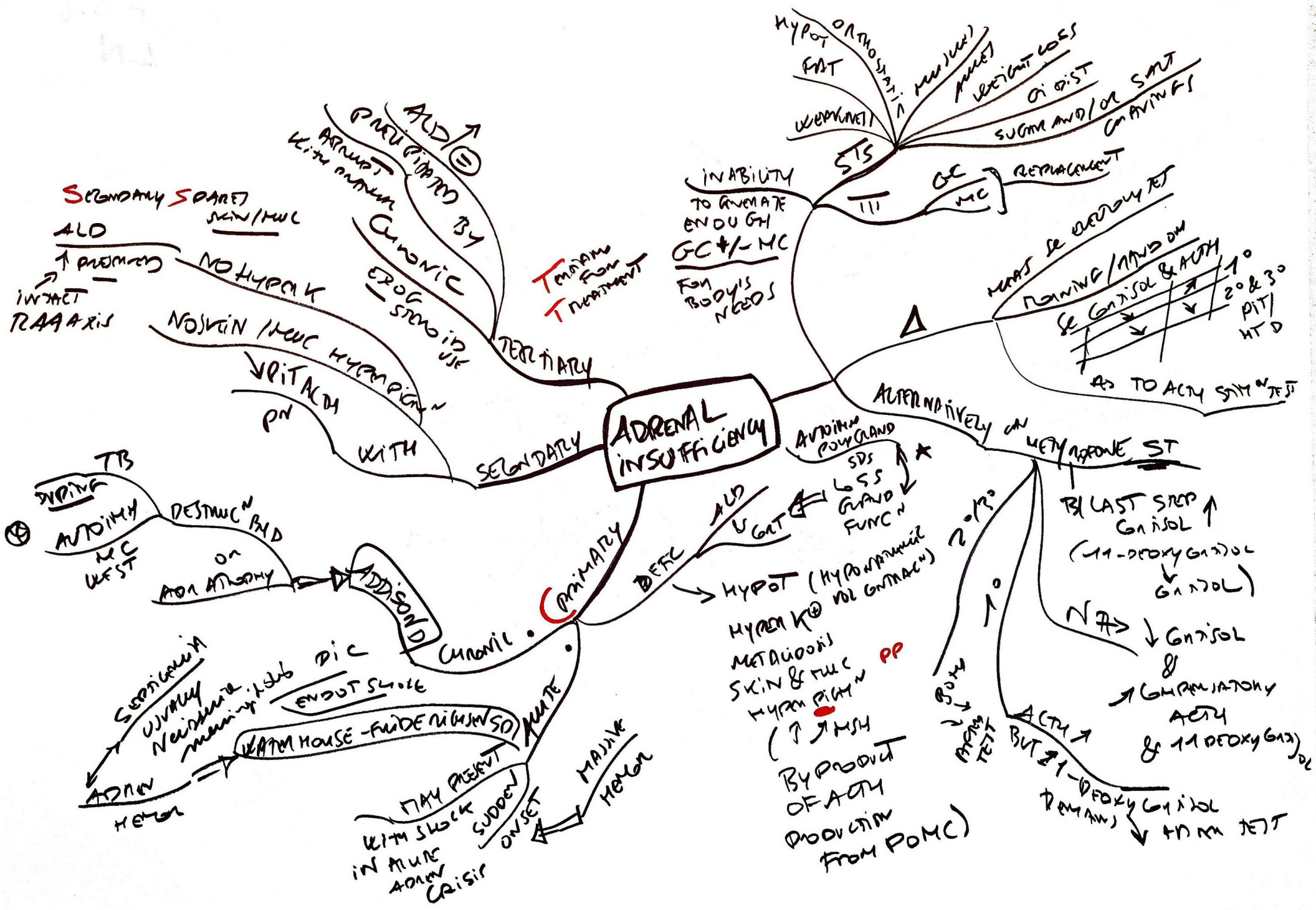
- OSEDP
- HYPERK (INSRESIST)
- AMENOR
- HYMNOS

- HT
- NIGHT GAIN
  - MOON FACIES
  - ABD SWELL & TRUNCAL OBESITY
  - BUFFALO HUMP
  - SKIN WARTS (THINNING SKIN)





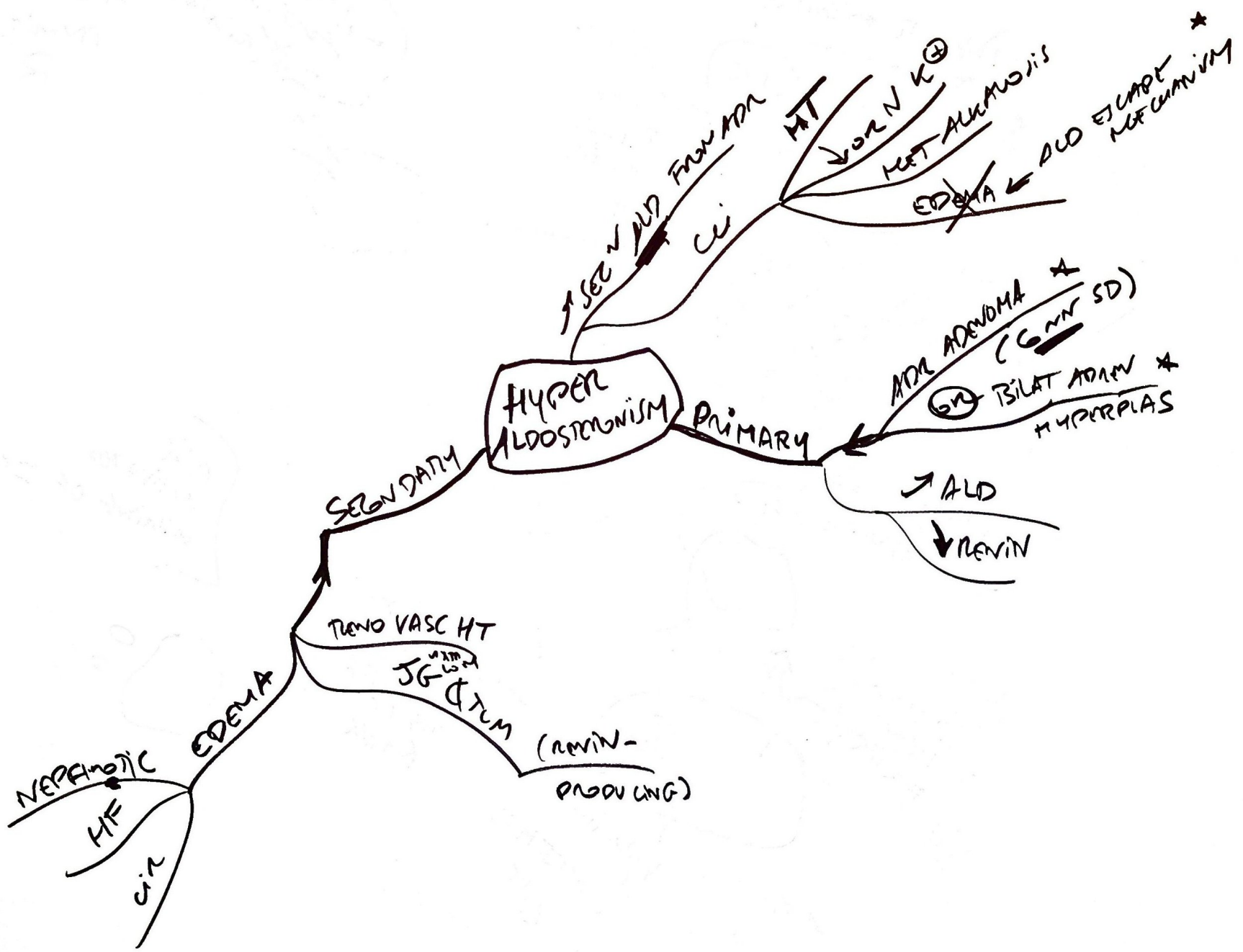
# ADRENAL INSUFFICIENCY



AS TO ACTH STIM TEST

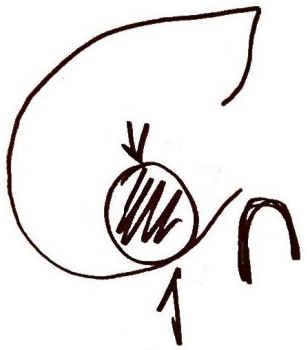
ACTH	10	20	30
CORTISOL	↑	↑	↑
11-DEOXYCORTISOL	↓	↓	↓
ACTH	↑	↑	↑
11-DEOXYCORTISOL	↓	↓	↓











OVER EXPRESN  
N-myc

BOYBESIN  
& NSE ⊕

HOMER-KNIGHT  
ROSETTES

APUD  
TUM

NEUROBLASTOMA

in childhood USUALLY < 4 Y  
MC TUM  
OF  
ADREN  
MEDULLA

NEURAL CREST &  
ANYWHERE ALONG SYMPATHETIC CHAIN

NEUROBLASTOMA  
& NEURINOMA  
CLAM

JHVA  
& VMA  
(CATECHOLAMINES)  
IN URINE

MC PRESENT IN ABD DISTEN<sup>N</sup>  
IRREG  
MASS

THAT CAN  
CROSS  
MIDLINE  
(VS KILMISTUM  
& UNILAT)

LESS LIKELY TO DVP  
CAN ALSO  
PRESENT WITH

OPSOCLONUS-  
MYOCLONUS  
SD

"DANCING EYES"  
FEET

PHOENACOL  
CYTOMA

# PHEOCHROMOCYTOMA

ADULTS

MC TUM ADREN MEDULLA

ETIO

can be malignant & cause normal met (met)

MAY BE GENETIC MUTATIONS

NF-1  
VHL  
RET  
[MEN 2A 2B]

## RULE OF 10'S

- 1 - 10% MALIGNANT
- 1 - 10% BILAT
- 3 - 10% EXTRA ADREN
- 4 - 10% CALIFY
- 5 - 10% KIDS

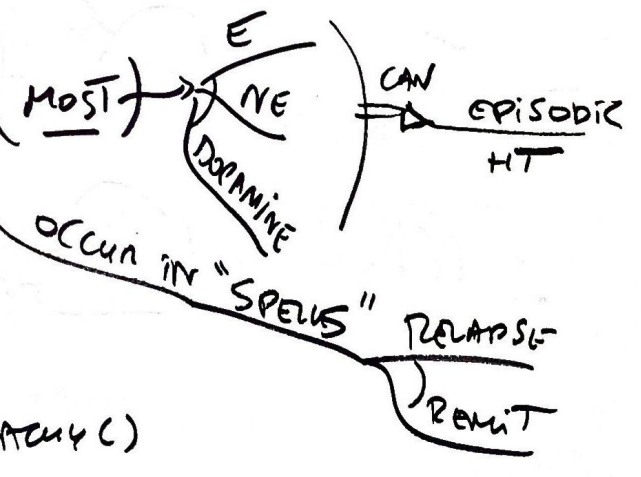
BLANCK  
LKH  
ORGANU  
ZUCKMANN

STS

EPISODIC  
HYPERADRENALIC  
STS

SP's

- PRESSURE (HTBP)
- PAIN (HEADACHE)
- PERSPIRATION
- PALPITATIONS (TACHY C)
- PALOR



FINDINGS

CA TROPHICAMINES & META NEPHRINES IN U & PLASMA

III

immed & ANTADOLS

BB

FOCUSSED BY

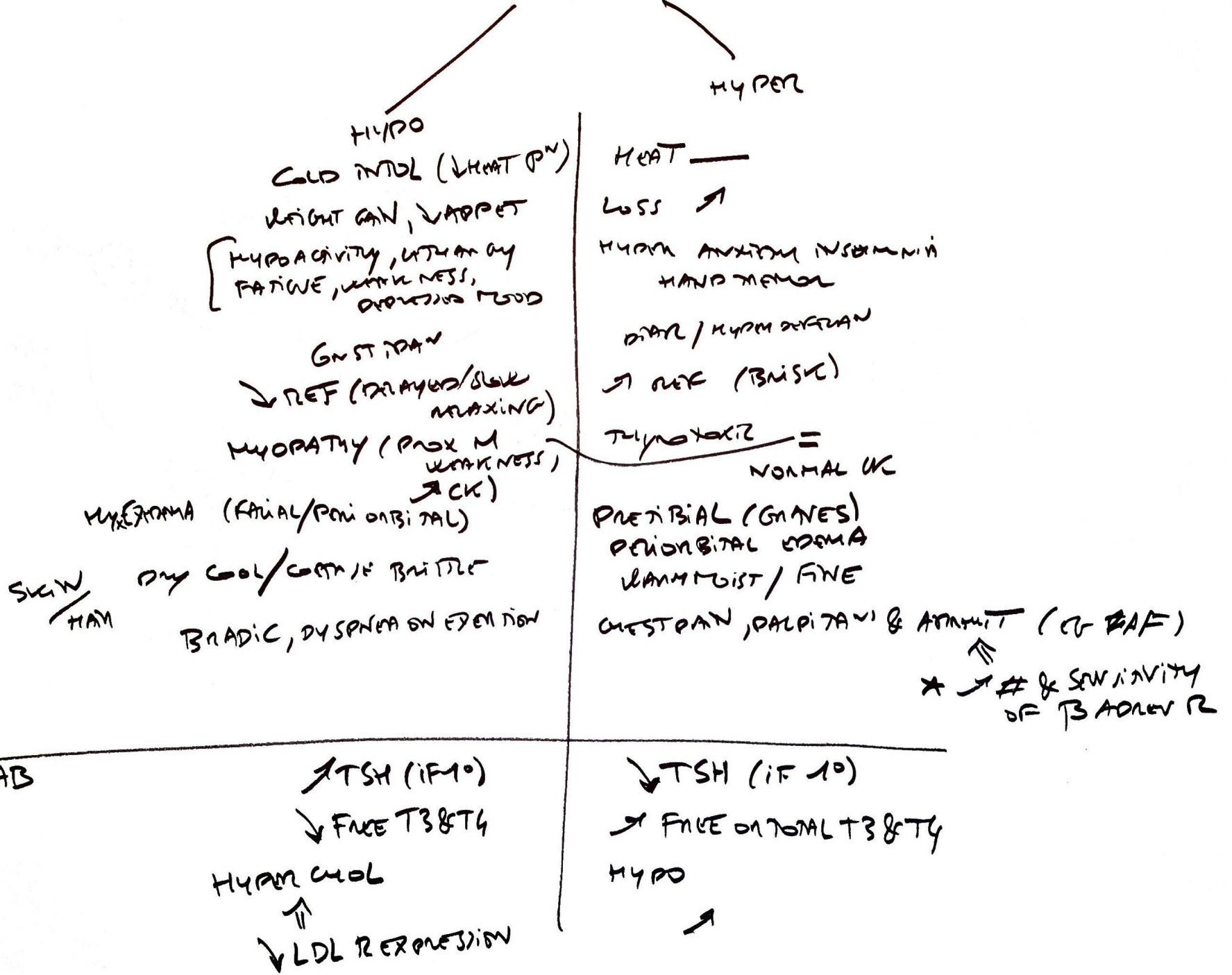
PHENOXYBENZAMINE

TO AVOID HT CRISIS

PRIOR TO TUM RESECTION



# THYROIDISM

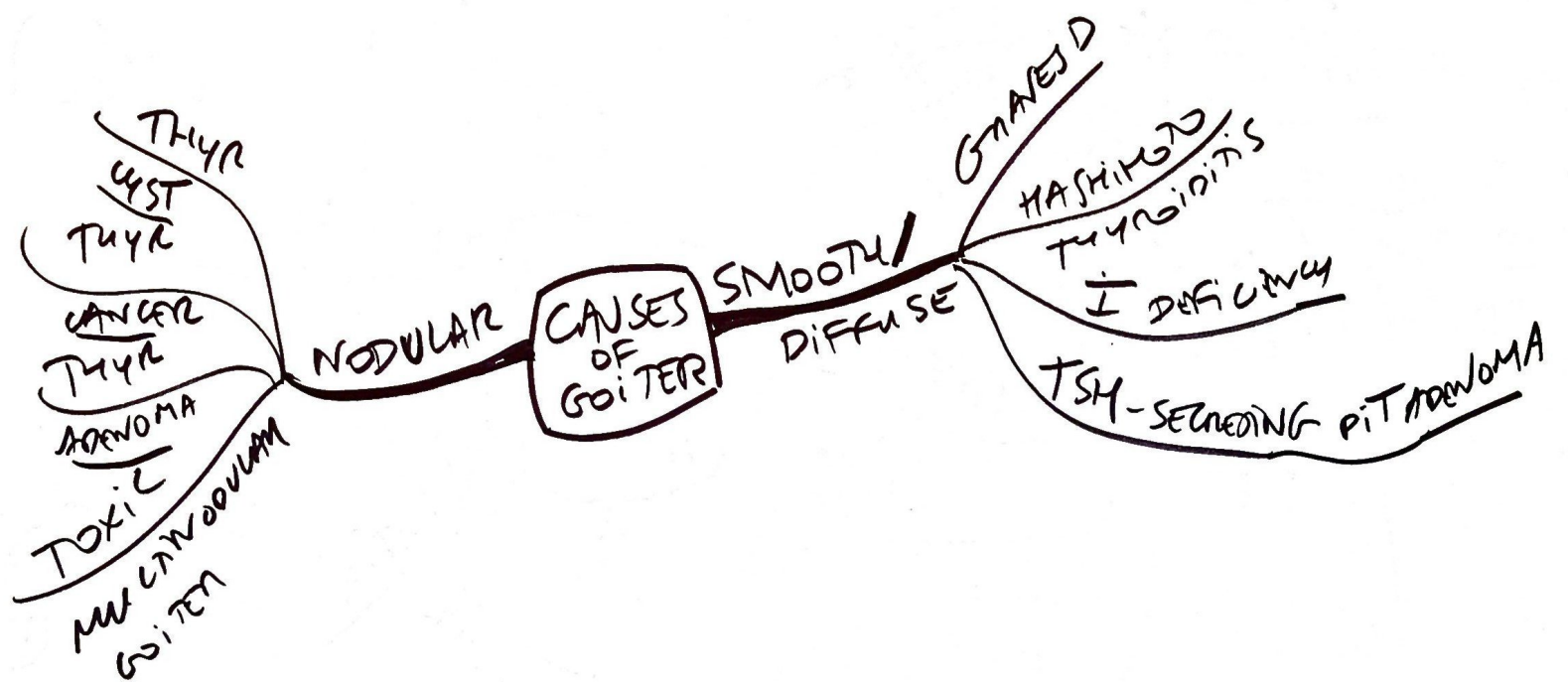


LAB

↑ TSH (IF 10)  
 ↓ FREE T3 & T4  
 HYPOMCHOL  
 ↑  
 ↓ LDL REPRESSION

↓ TSH (IF 10)  
 ↑ FREE OR TOTAL T3 & T4  
 HYPO  
 ↑

\* ↑ # & SENSITIVITY OF T3 ADNER R







PEROXIDASE (TPO) (ANTIBODY) → T<sub>4</sub> = TG → RISK NHL TYPE (B) ORIGIN → MAYBE HYPERT EARLY → THYROTOXICOSIS DURING FOLLOW UP SUPP → MURTIKE, LYMPHOID AGONES + GC → MODERATELY ENLARGED → MONTENDEM

HAIR LOSS, AORTITIS, RETROPHARYNGEAL FIB, AUTO IMM, PANC IN, SHITD, IGG G RELATED, WITH IAMY INFILTRATE

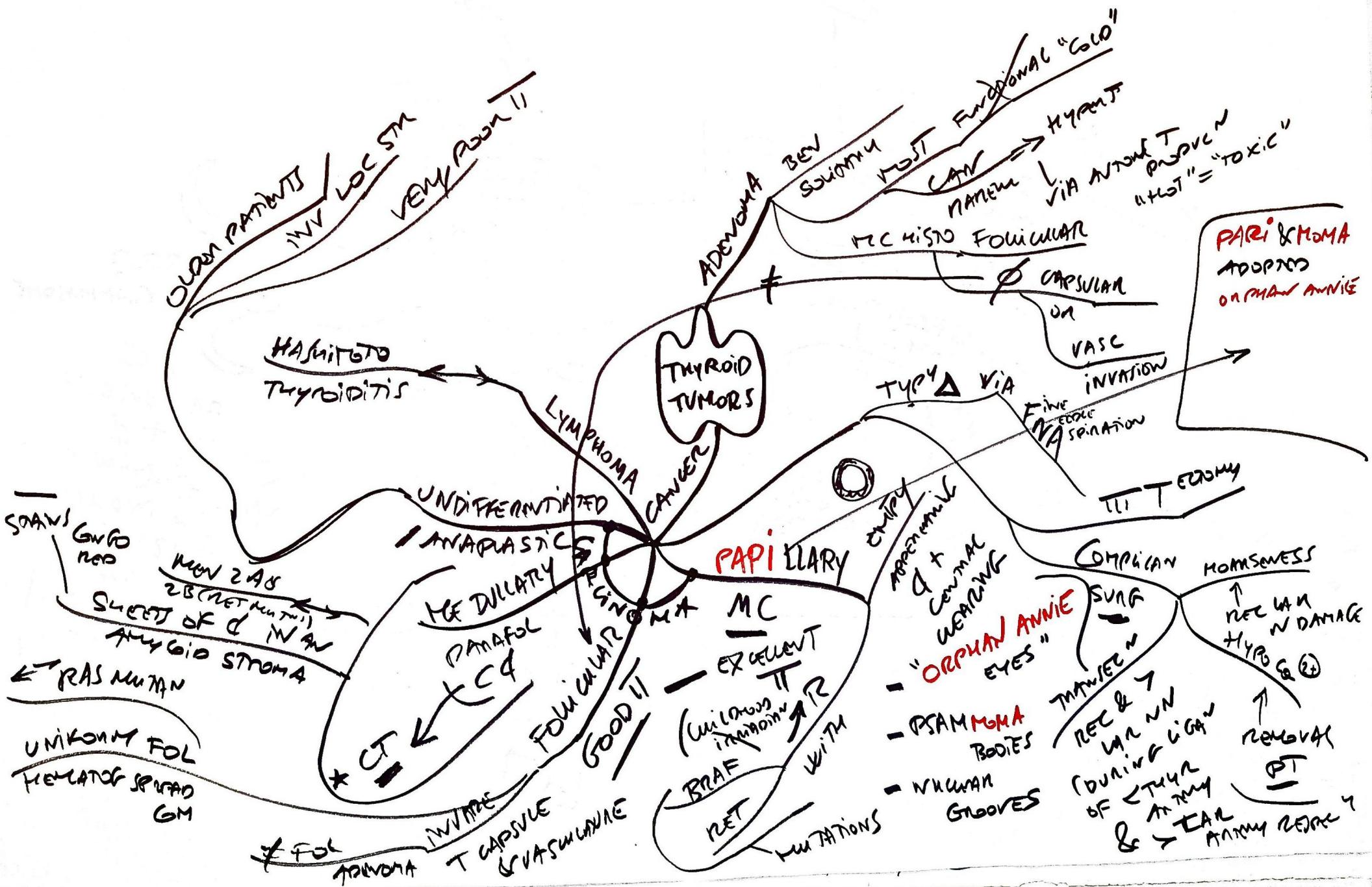
TRAC, ELOP, FIB, HYPOT, ANAPCA, VERY TENDER, JAW PAIN

6P3  
 POTTERED  
 PALE  
 PUFFY FACE  
 PROTRUDING URTICARIA  
 PROTRUSION TONGUE  
 POOR BARR  
 DRPT

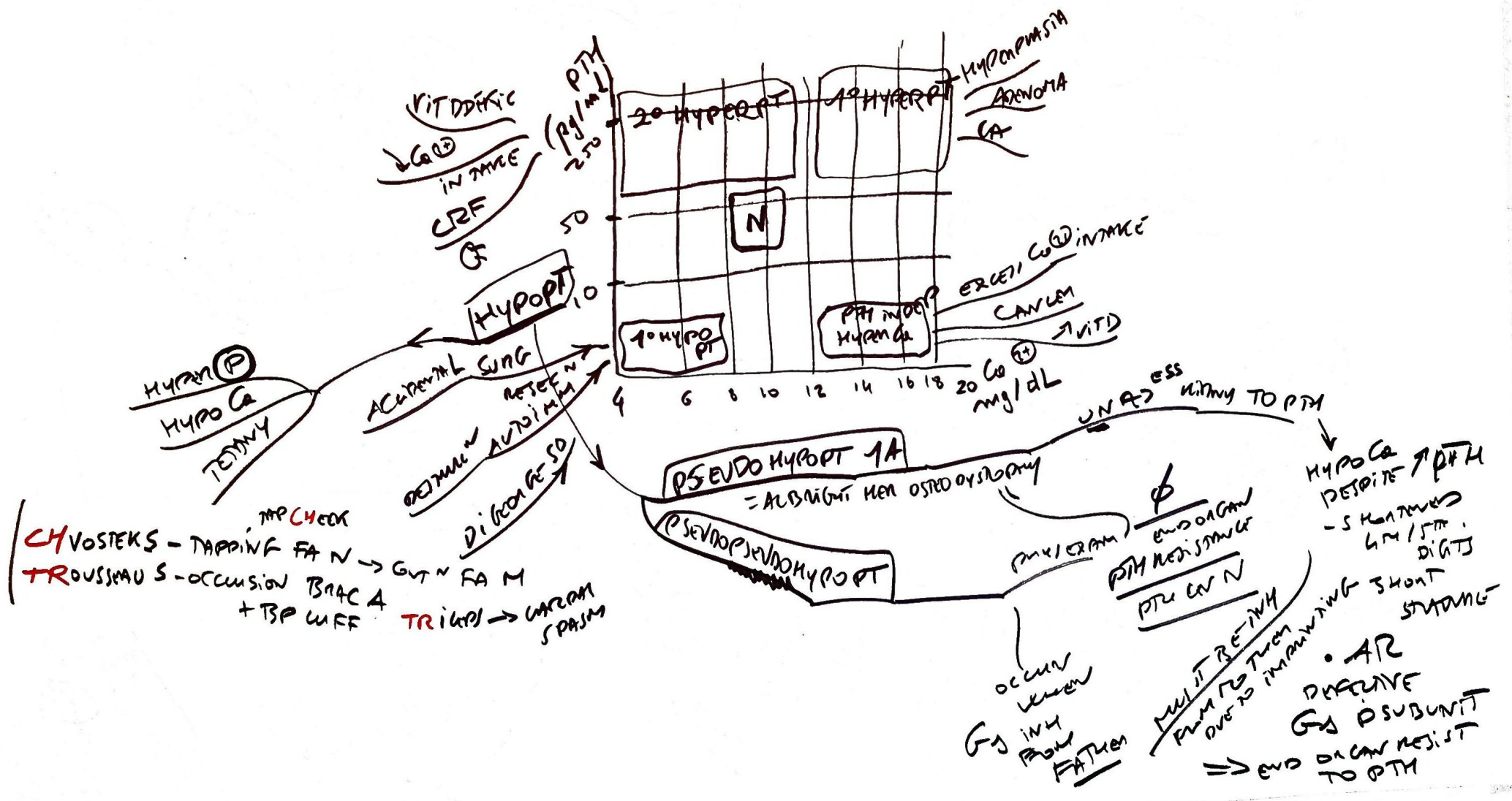








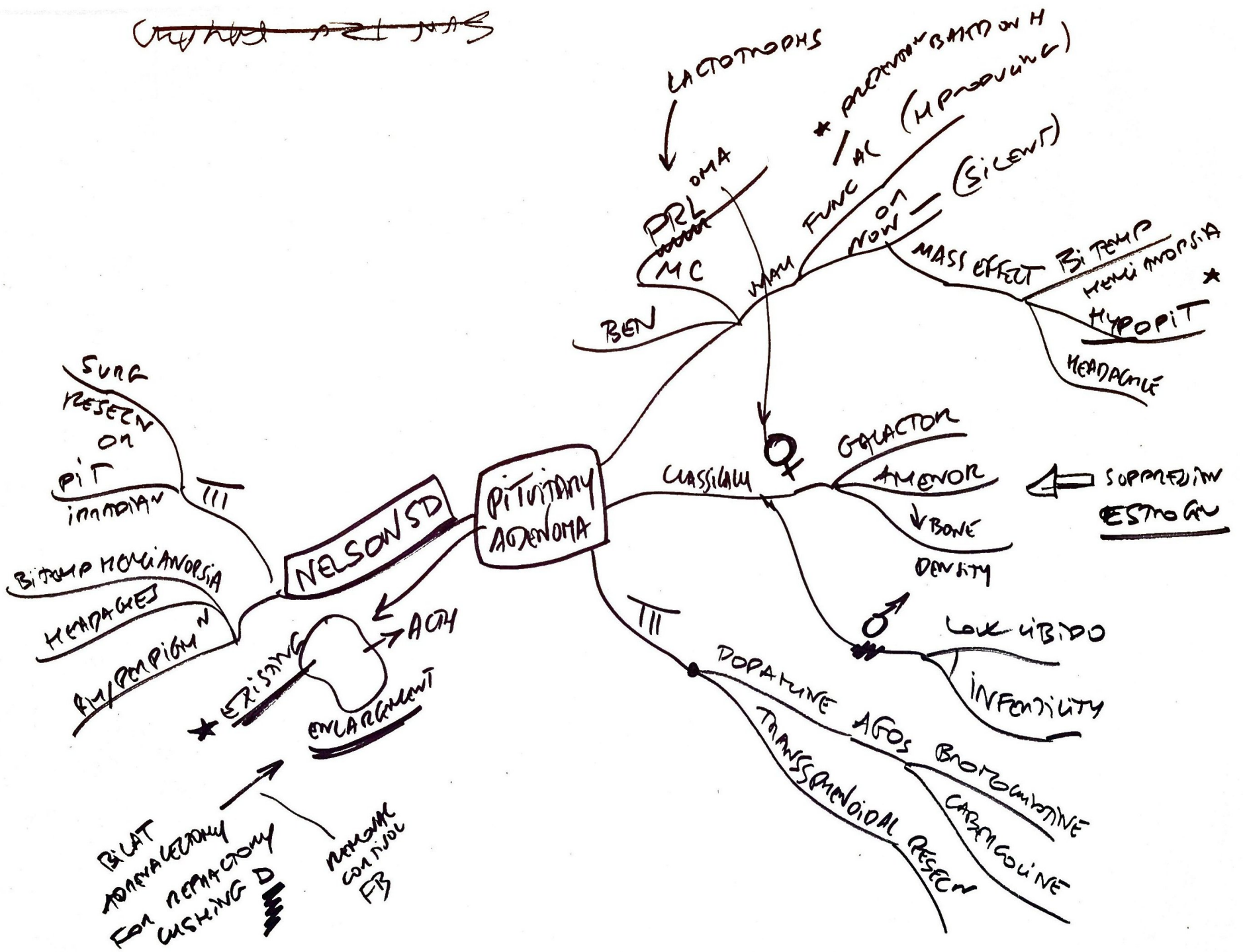
PANATHYR







~~Other notes~~



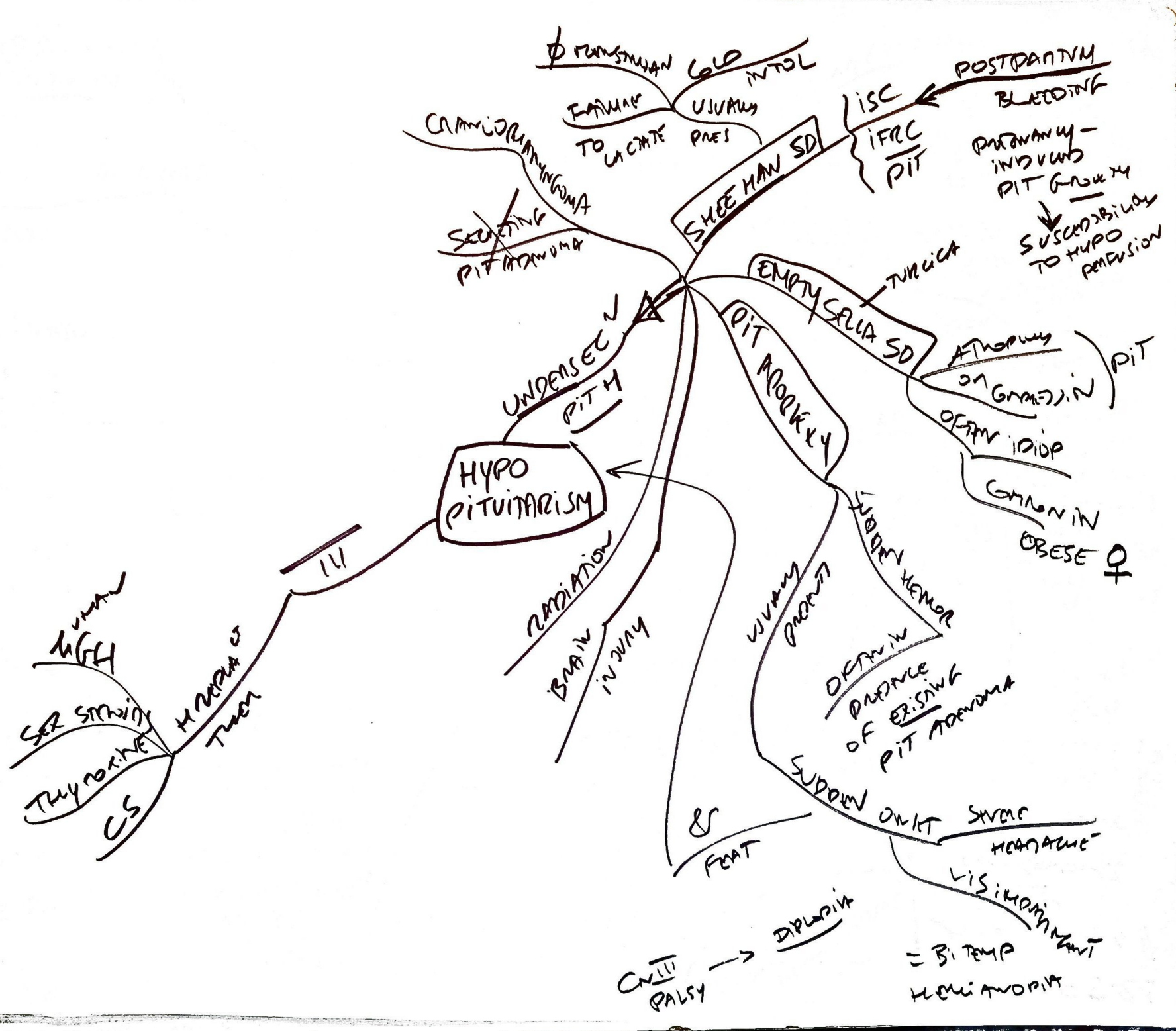




CENTRAL	NEPHROGENIC	ETIO
<ul style="list-style-type: none"> <li>PIT TUM</li> <li>ACTH</li> <li>TRAIUMA</li> <li>SURF</li> <li>ISX EVASIVABP</li> <li>IDIP</li> </ul>	<ul style="list-style-type: none"> <li>HEP (ADH RE MULTN)</li> <li>20% HYPO Na-Bal</li> <li>HYPOK</li> <li>LITHIUM</li> <li>DEMECLOQUINE</li> <li>ADAMANTOL</li> </ul>	
↓ ADH	NOT ↑ USQUR CAPACITY < 1.006 Se OSM > 295 mOsm/kg HYPOSM VOL CONTRAC <sup>n</sup>	FINANCIAL
> 500% ↑ U <sub>osm</sub> ONLY AFTER ADMIN <sup>n</sup> ADH ANALOG	LOW U <sub>osm</sub> U <sub>osm</sub> U <sub>vol</sub> AFM ADMIN ADMINALOG	H <sub>2</sub> O DEPRIVAN TEST
DETRG PRESAN AGTATE HYDRAN	HCTZ INHIBITING ANGIOTENSIN HYDRAN, DIET SALT RESTRICTION AVOIDANCE	III

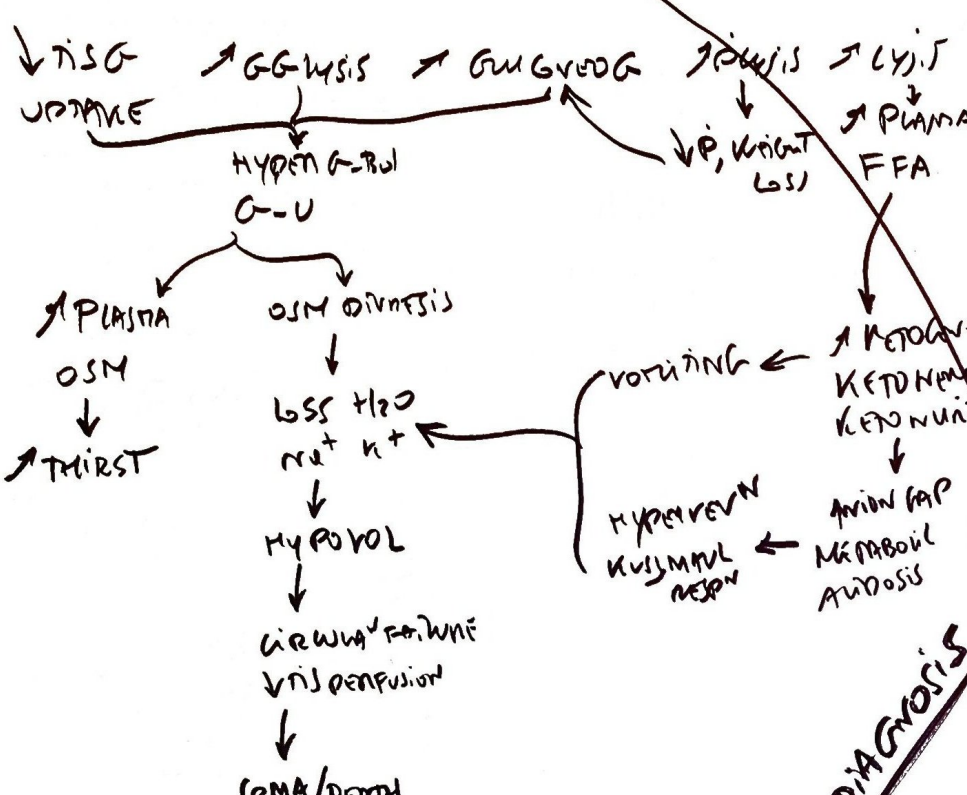
U<sub>osm</sub> DOES NOT MIX  
 → PLASMA OSM DESPITE PLASMA Na<sup>+</sup> ≥ 145 OR U

ADH ANALOG ADMINISTRATION  
 IF Se OSM > 295-300  
 NO H<sub>2</sub>O INTAKE FOR 2-3H  
 FOLLOWED BY HOURLY MEASUREMENTS OF U<sub>vol</sub> & OSM  
 PLASMA & [Na<sup>+</sup>] & OSM





INSULIN DEFICIENCY OR SEVERE INSULIN INSENSIVITY



TEST	CUTOFF	NOTES
HbA1c	≥ 6.5%	REFLECTS AVERAGE B1G OVER PAST 3M
FASTING PG	≥ 126 mg/dl	FASTING FOR > 8H
2H ORAL G TOLERENCE TEST	≥ 200	2H AFTER GUS <sup>2</sup> OF 75g G IN H <sub>2</sub> O

TEST SENS [Glove & oximetry] & ANTON DEGRIN

OSMOTIC DAMAGE IN ORGANS WITH ALDOSE ACCUMULATION

DIABETIC TRIGGERING BM

NON ENZYMIC GLYCATION

SMALL VESSEL

LARGE VESSEL

CATARACTS

NEUROPATHY

OSMOTIC DAMAGE IN ORGANS WITH ALDOSE ACCUMULATION

LIMB LOSS

CEREBROVASCULAR DISEASE

MI MCE +

RETINOPATHY

NEPHROPATHY

KIDNEY FAILURE

GASTROENTEROPATHY

PERIPHERAL VASC DISEASE

OCULOPATHY

PROLIFERATIVE P-U [INITIALLY MALP-U, ACFT ARE PROLIFERATIVE]

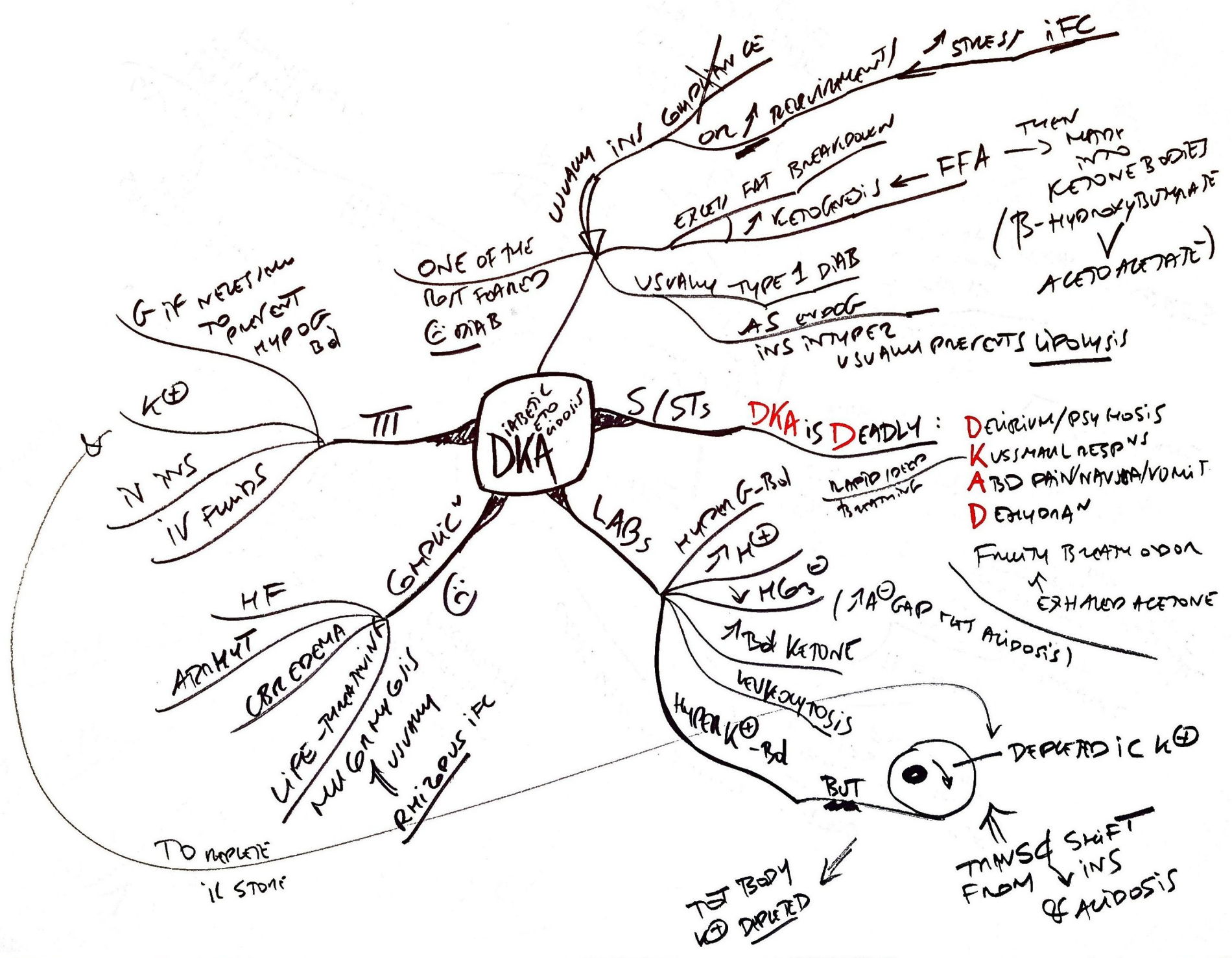
ARTERIOLOSCLEROSIS

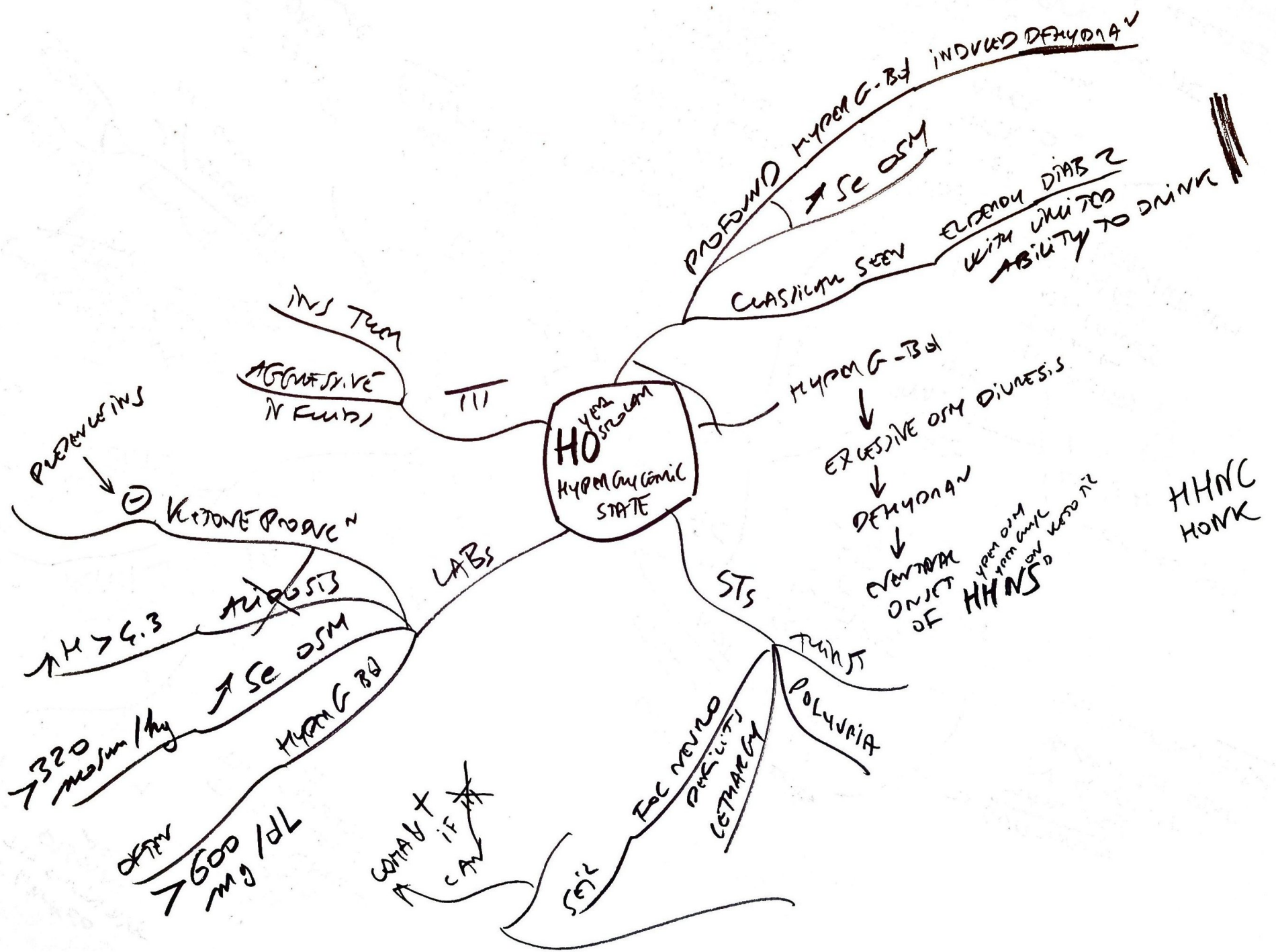


DM

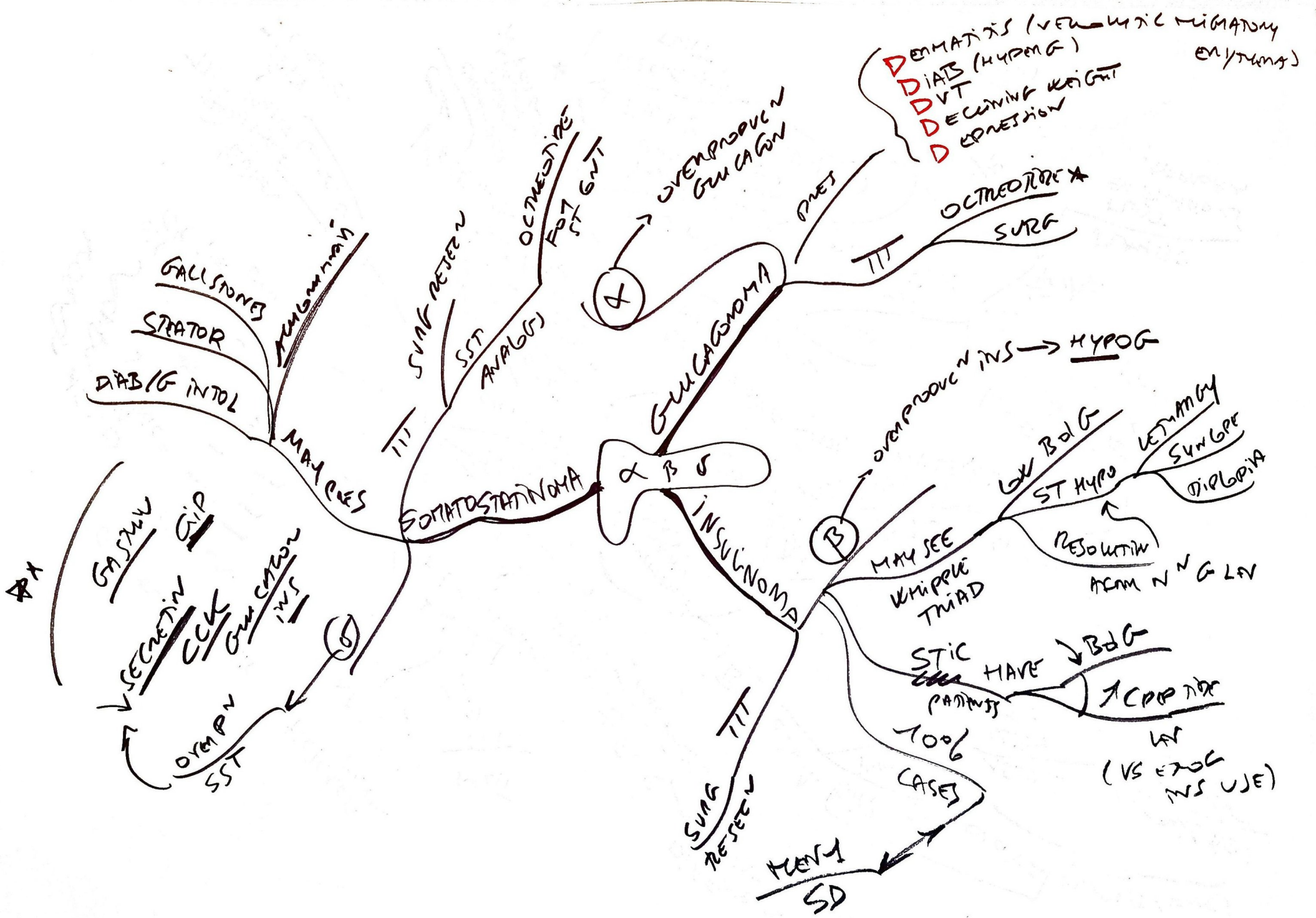
	1	2
- 1 <sup>o</sup> DEFECT	AUTOIMMUNE DESTROY $\beta$ CELLS EG $\uparrow$ GLUTAMIC ACID CARBOXYLASE $\rightarrow$ Abs	$\uparrow$ RESIST TO INS, PROG PANC $\beta$ FAILURE
- INS RESIST IN III	ALWAYS	SOMETE
- AGE (EXCEPT GM)	< 30Y	> 40Y
- $\leftrightarrow$ OBESITY	NO	YES
- GENETIC PREDISP	RELATIVELY WEAK (50% GINGRANKE IN IDENTICAL TWINS) POLYGENIC	STRONG (90%)
- $\leftrightarrow$ HLA	HLA DR3 - 4	
- G INTOL	SEVERE	MILD $\rightarrow$ MODERATE
- INS SENSITIVITY	HIGH	LOW
- KETOACIDOSIS	COM	RARE
- ISLET # IN ISLETS	$\downarrow$	$\uparrow$ (WITH AMYLOID DEPOSITS) $\uparrow$
- SE INS LN	$\downarrow$	SOMETE
- CLASSIC ST POLY U D P WEL	COM	
- HISTO	ISLET LYMPHOCYTIC INFILTRATE	ISLET AMYLOID POLY PEPTIDE DEPOSITS





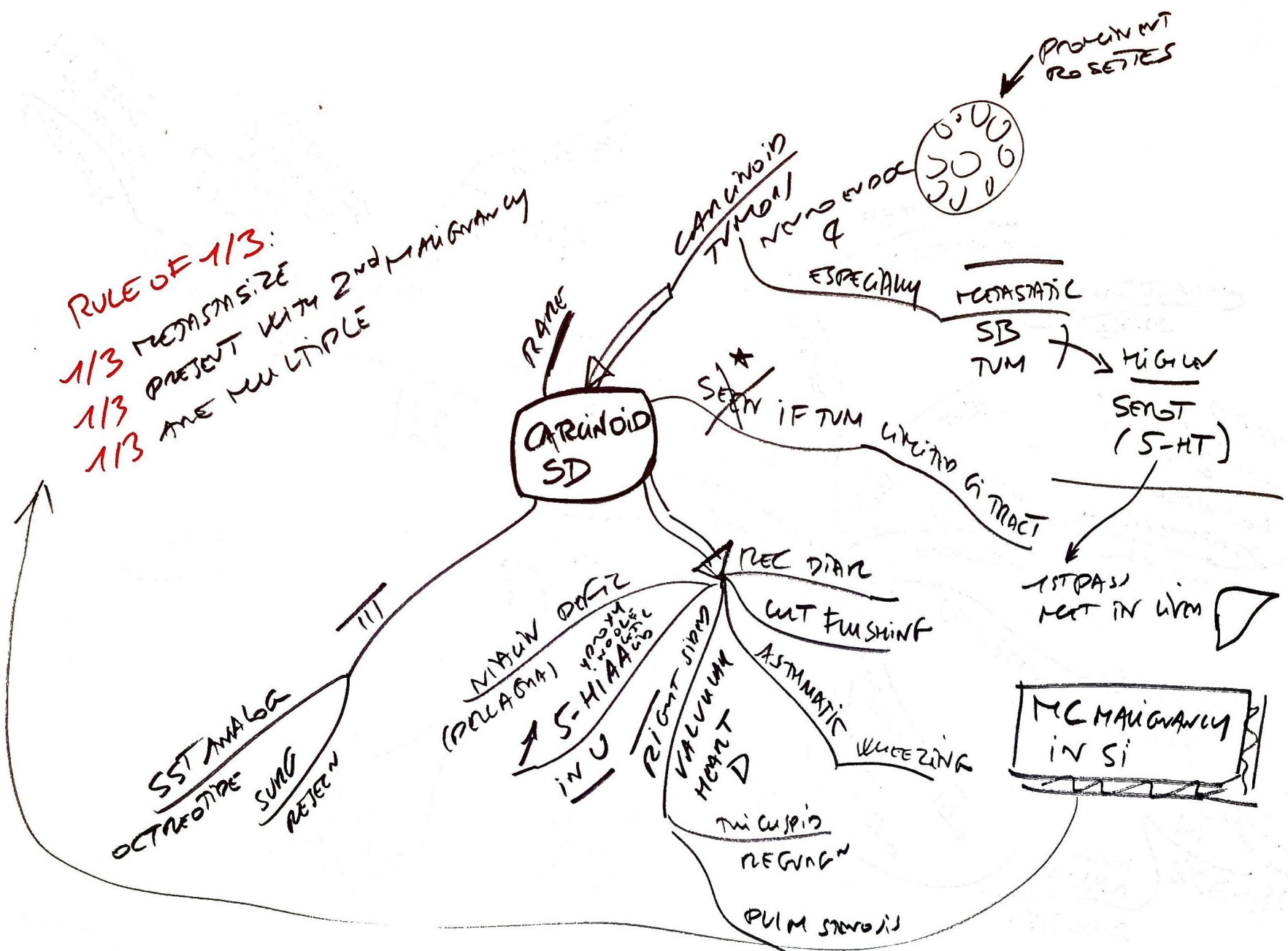




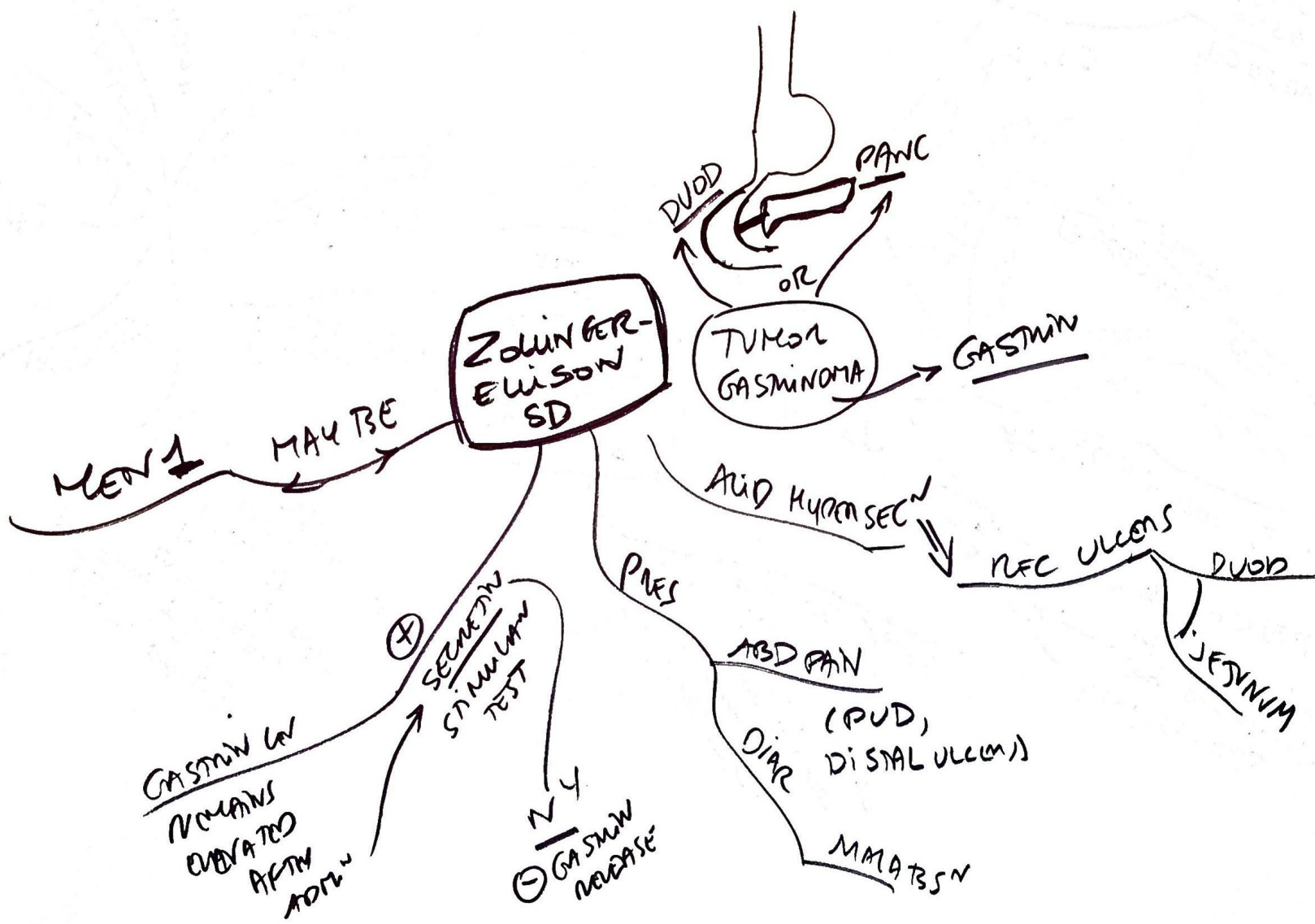


**RULE OF 1/3:**

- 1/3 METASTASIZE
- 1/3 PRESENT WITH 2nd MALIGNANCY
- 1/3 ARE MULTIPLE







MEN  
"ALL MEN ARE DOMINANT"

AD

