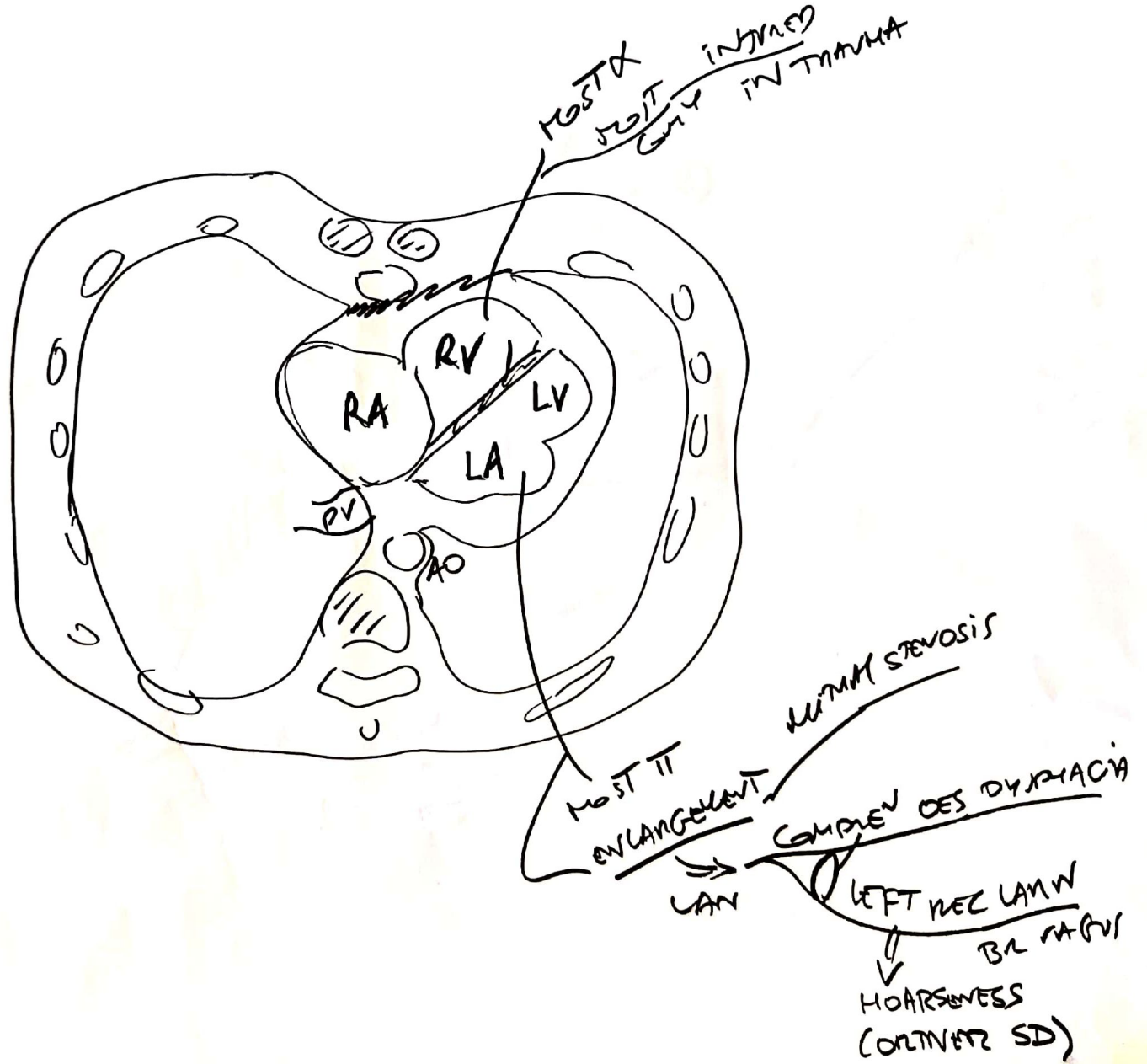
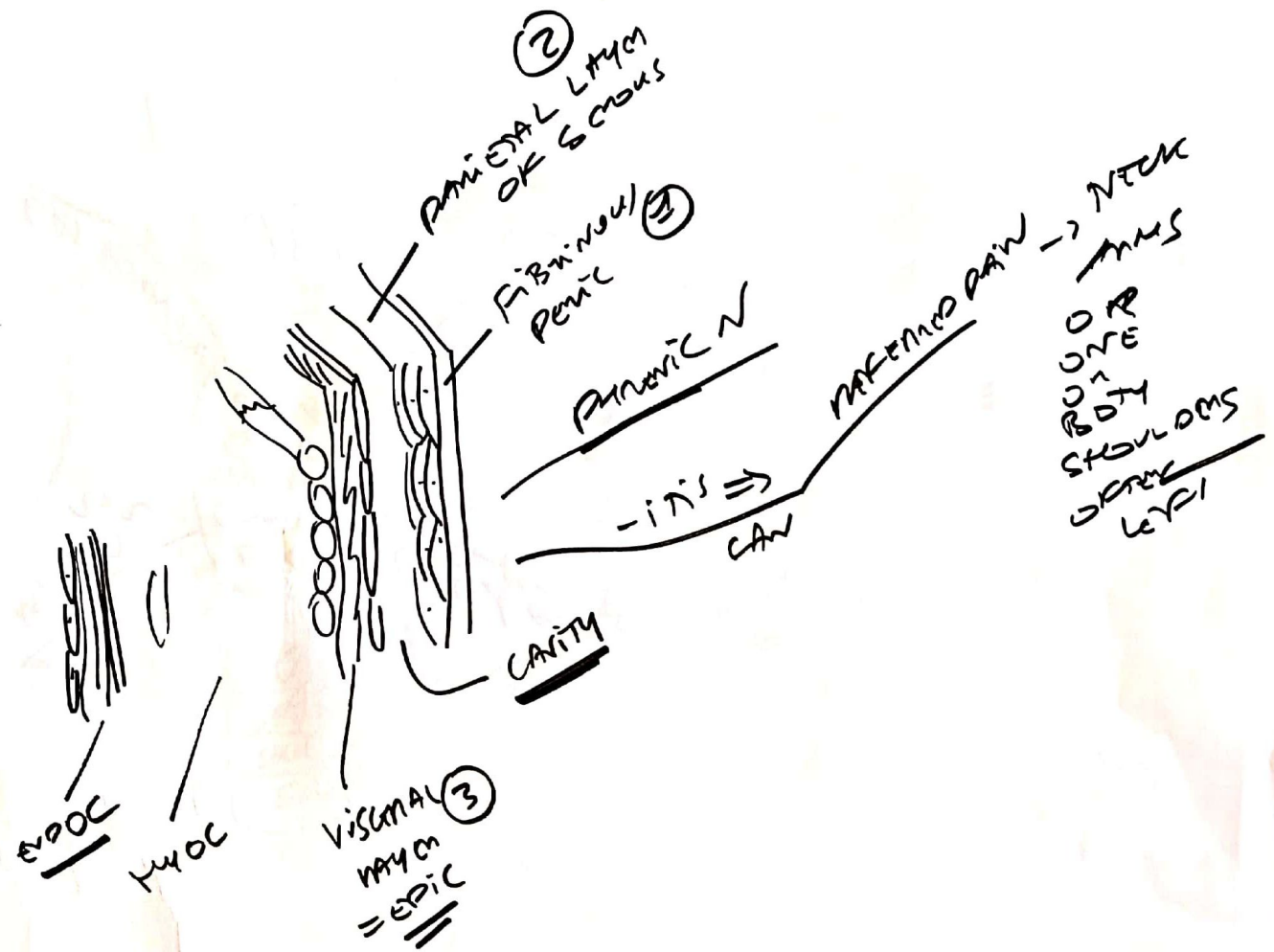
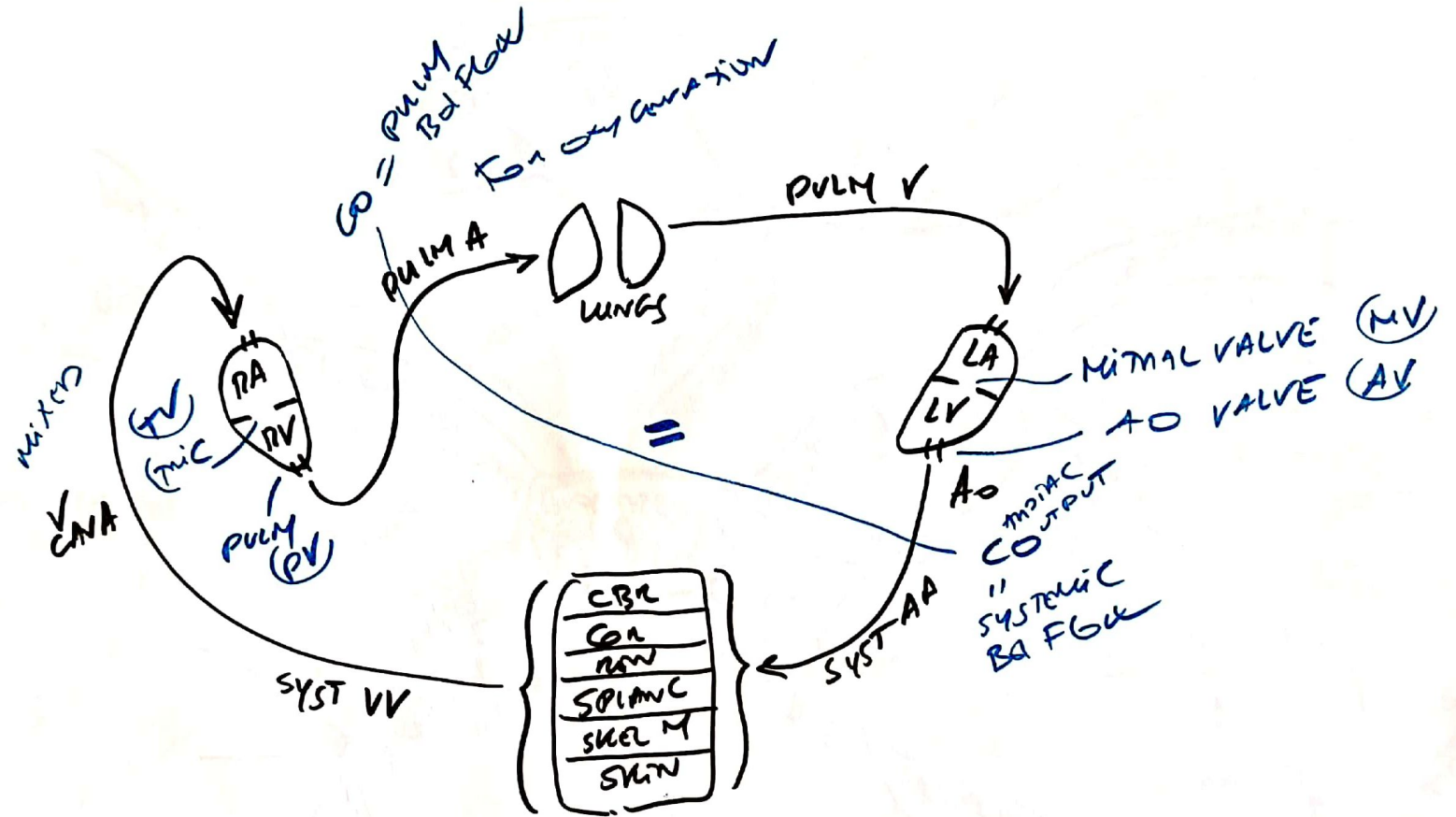
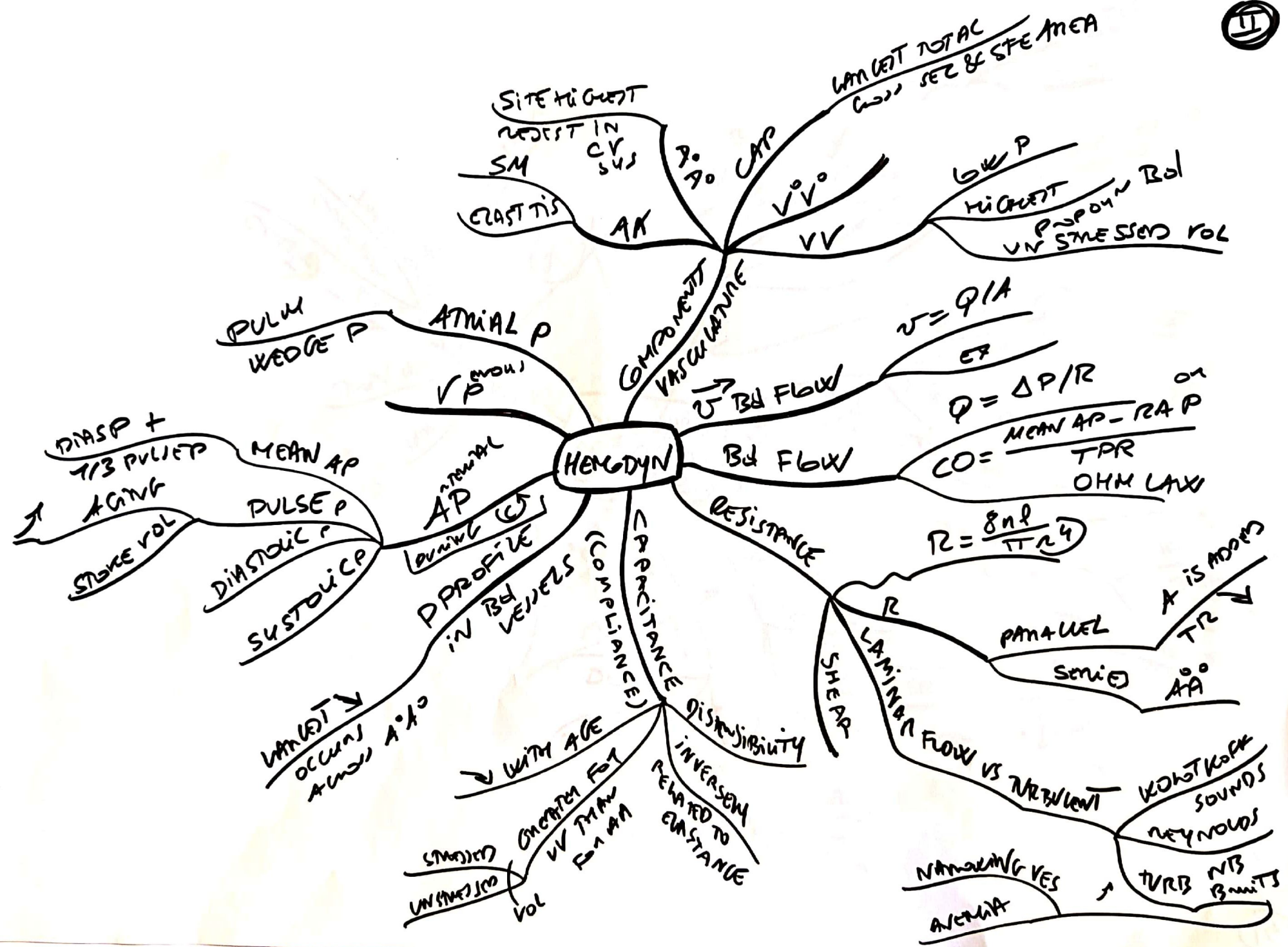


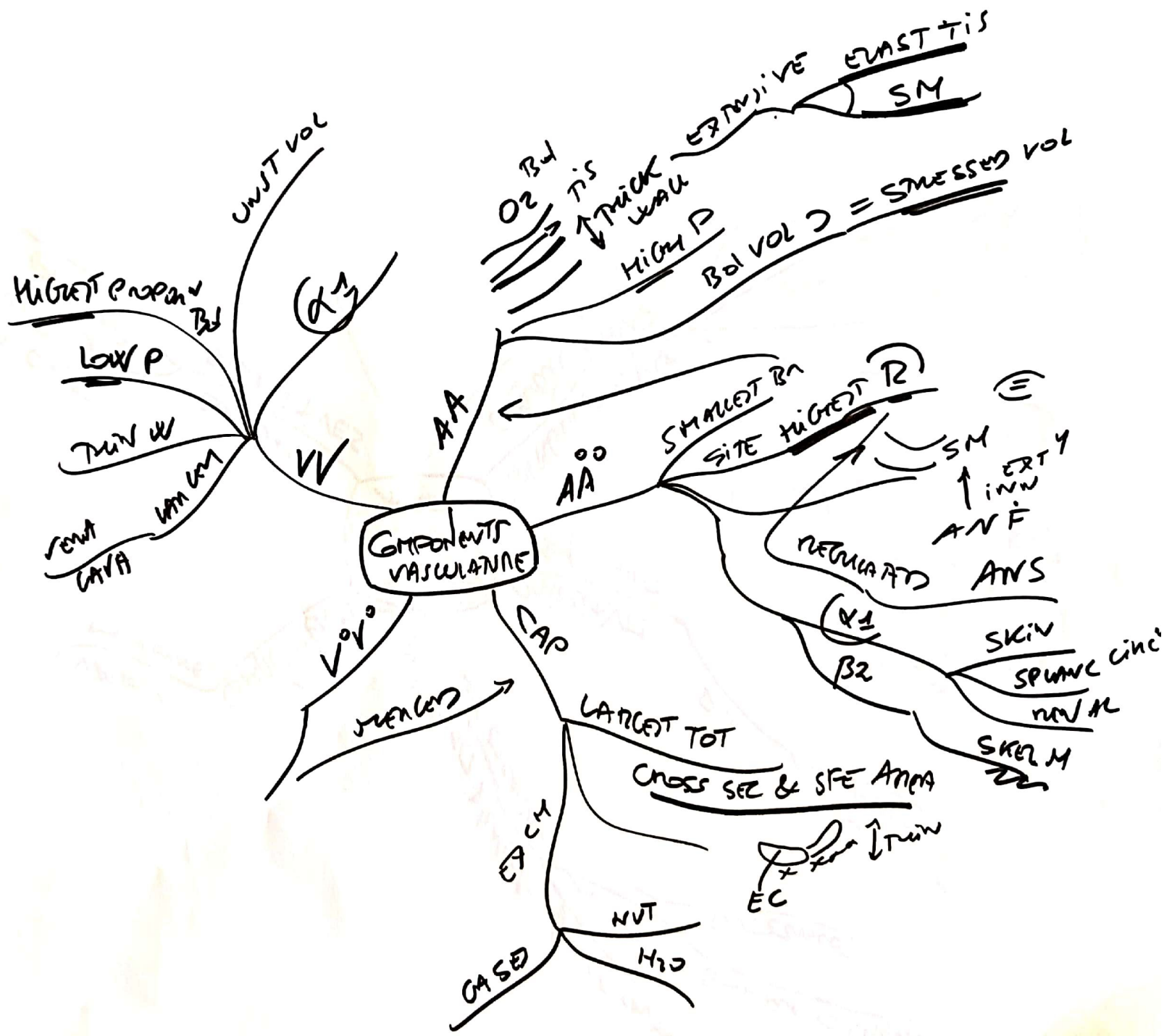
ANAT
R











VELOCITY
Bd Flow

$$v = \frac{Q}{A}$$

cm/sec

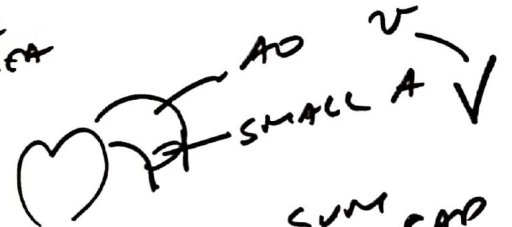
Bd Flow

mL/min

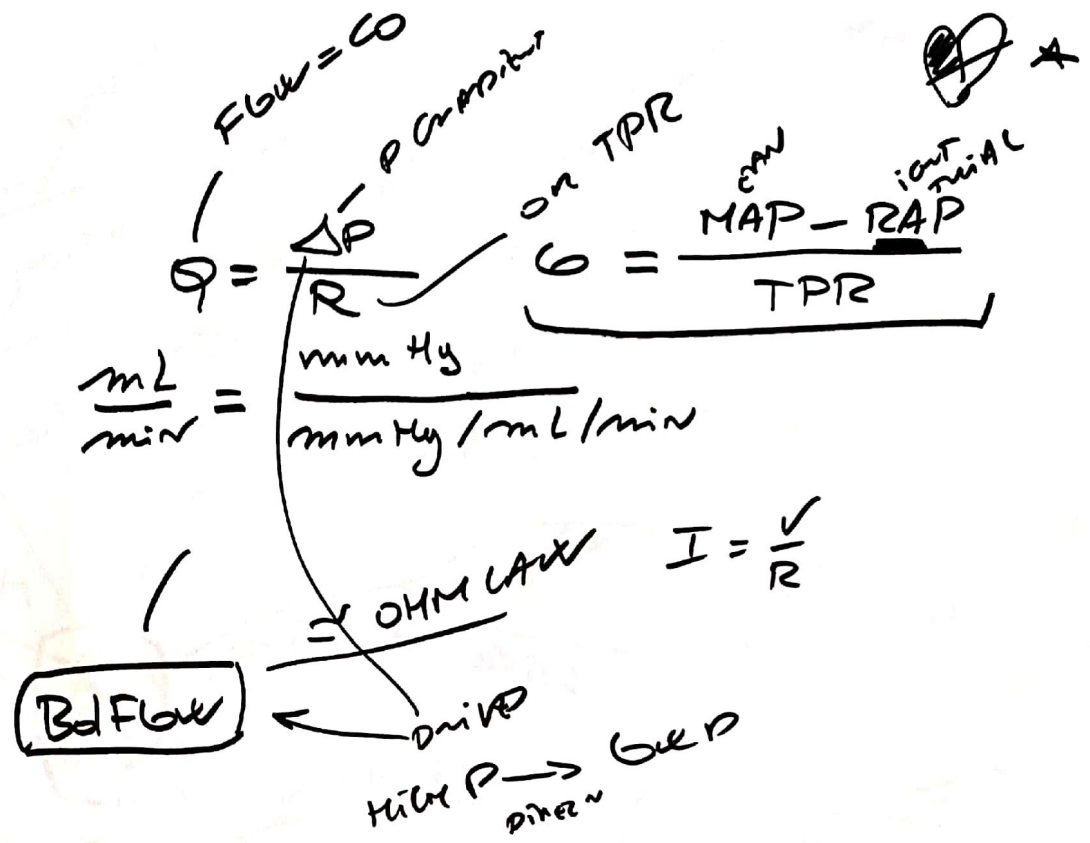
cm²

ANY LEVEL

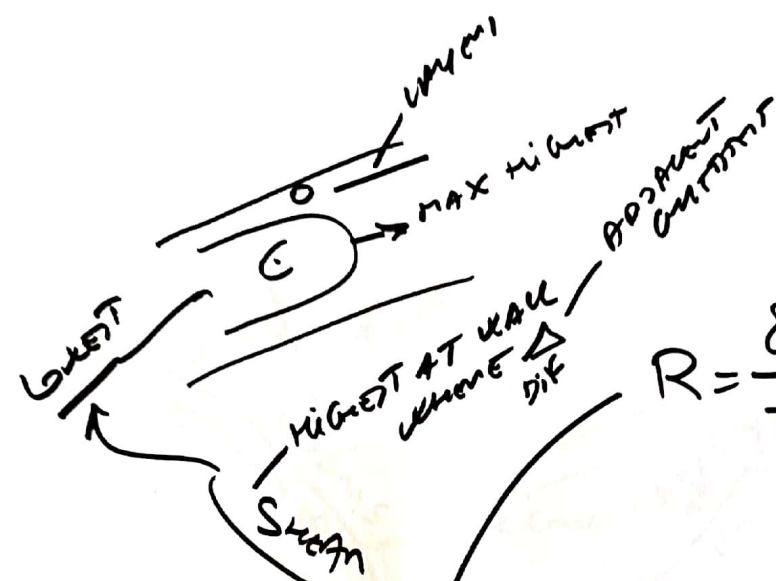
will SET AREA



~~XXXX~~ SUM ALL CAP RANGE
LOWEN
v OPTIMIZER
GND FOR EACH



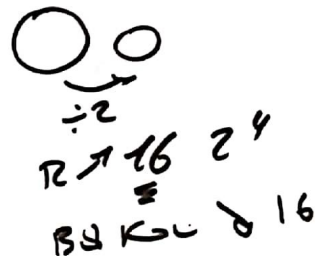
BRUITY
↑
TENDENCY
TURB



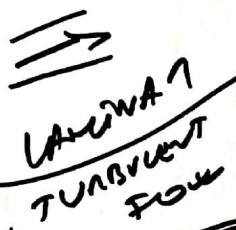
$$R = \frac{8\eta l}{\pi r^4}$$

↑ VISCOSITY →
← ↑ HEAT TREAT

↑ LOW COST



PREDICTS
REYNOLDS NB



KONSTANT
SOUNDS

R

PANEL SYMMETRIC



SEWER
WITHIN
A GIVEN
ORGAN

$$\frac{1}{R_{TOT}} = \frac{1}{R_a} + \frac{1}{R_b} + \dots + \frac{1}{R_n}$$

— LAMAR — HARMONIC — OTHER

WANGST
GUMIRUN
ANTRIDLES
A

$$R_{TOT} = R_a + R_{A0} + R_{CAP}$$

A
↓
CAL

MAJOR I/A
P SMALL

LESS
THAN
R ANY INDIV

* TOT R

PARALLEL
TOT FLOW



$$\Delta P = Q \times R$$

OHM'S LAW

$$\Delta V = I \times R$$

$Q = \text{Flow } v \times \text{Cross Sectional Area}$
 VOLUME FLOW RATE

CAPACITANCE
 LOWEST

$\gamma = \frac{P}{R \cdot S}$
 POWER

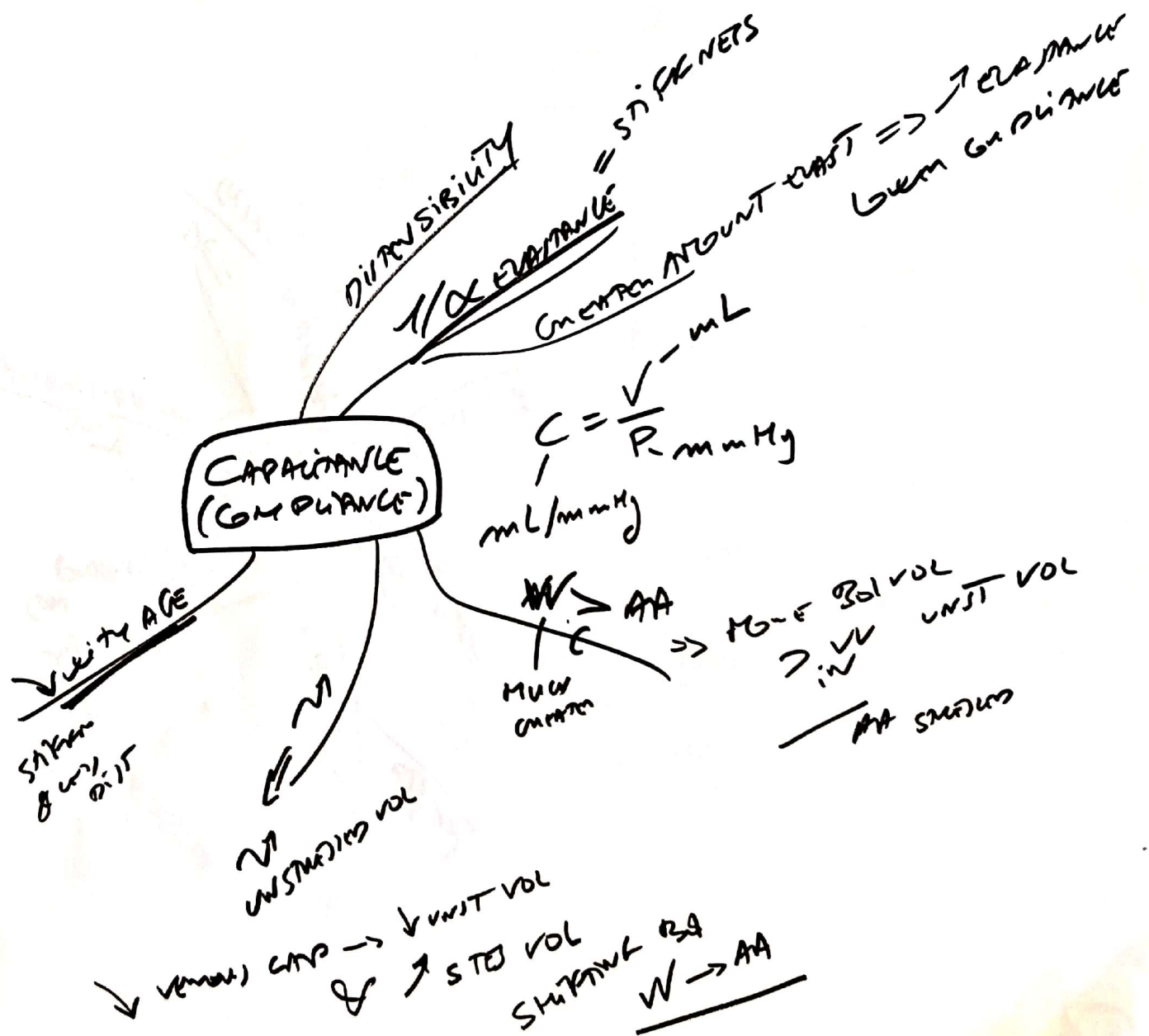
DRIVING P
 VV NOT
 BD STORING CAPACITY

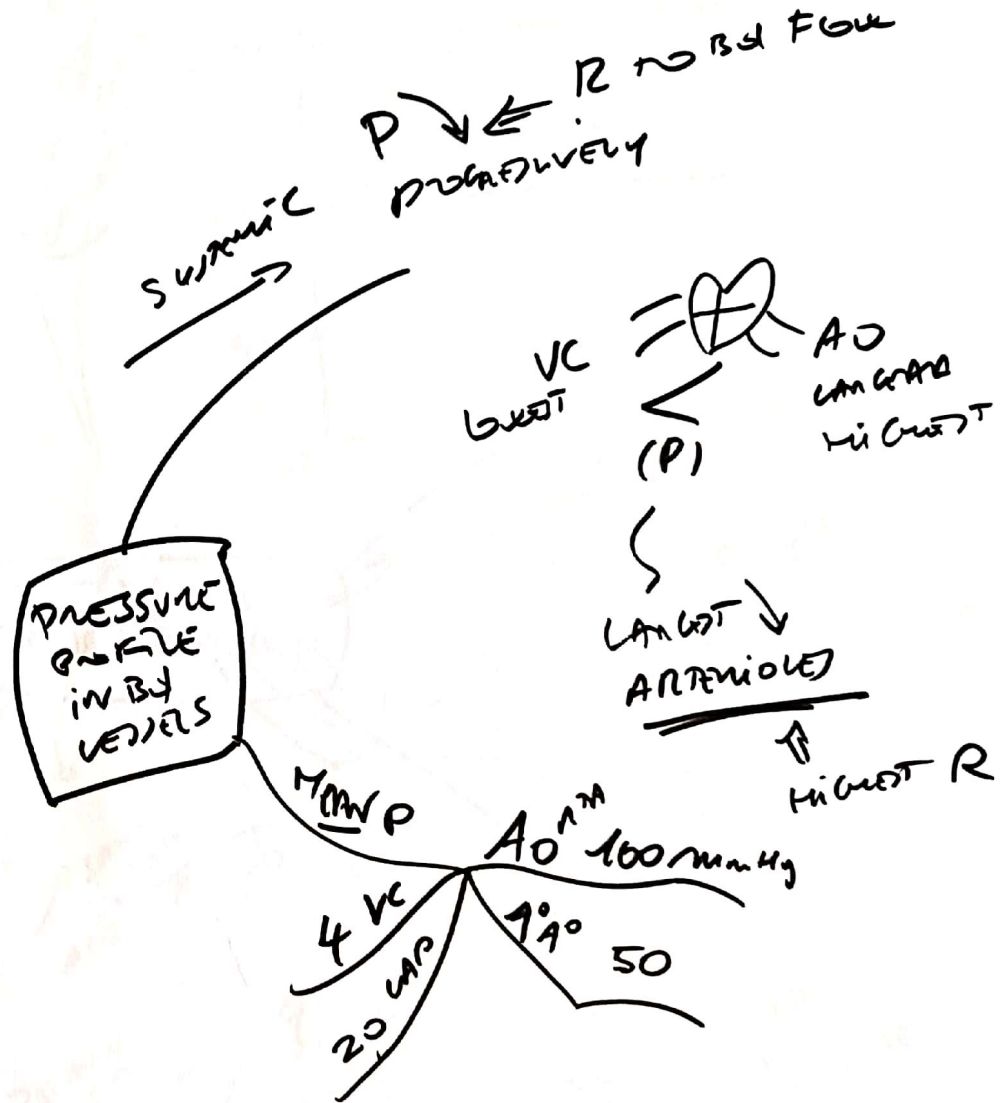
ΔA
 NOT TPR

$$R = \frac{\Delta P}{Q} = \frac{8 \eta \times l}{\pi r^4}$$

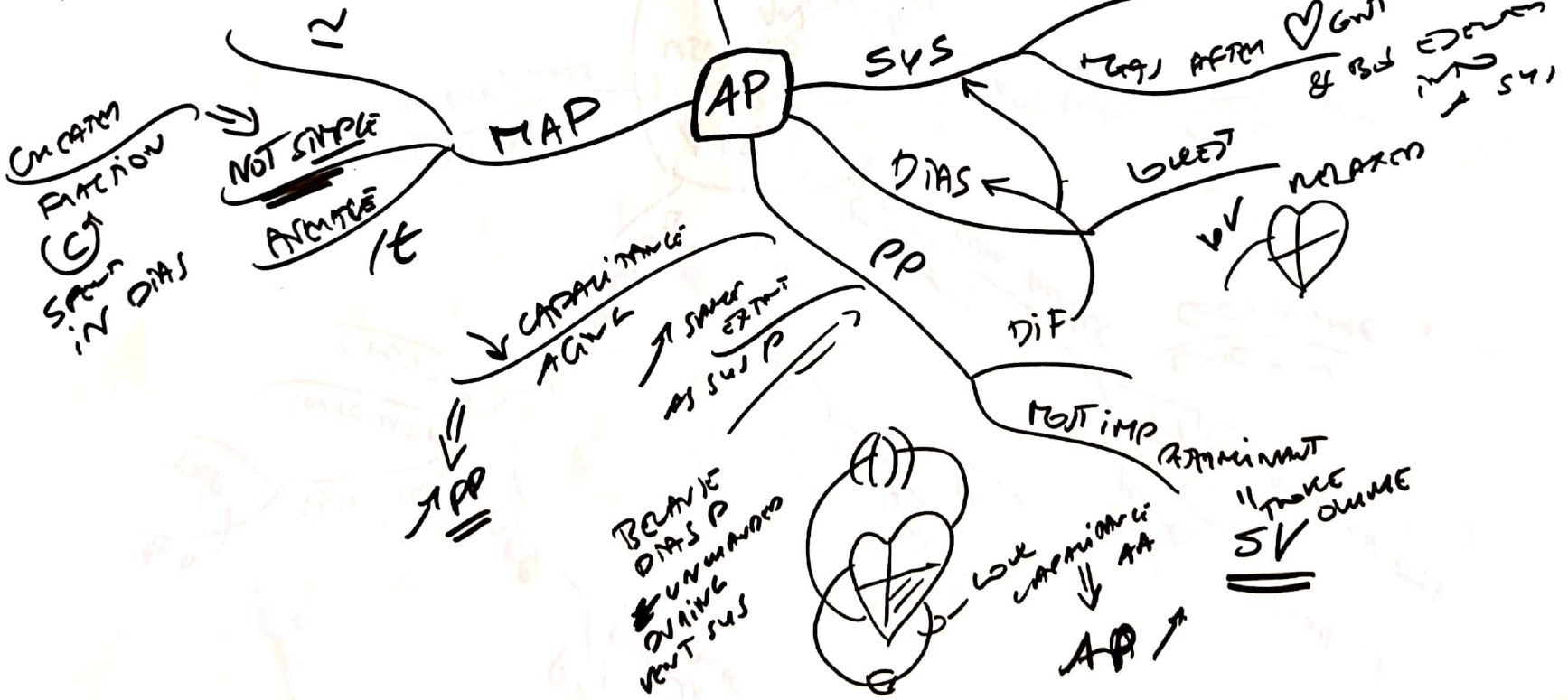
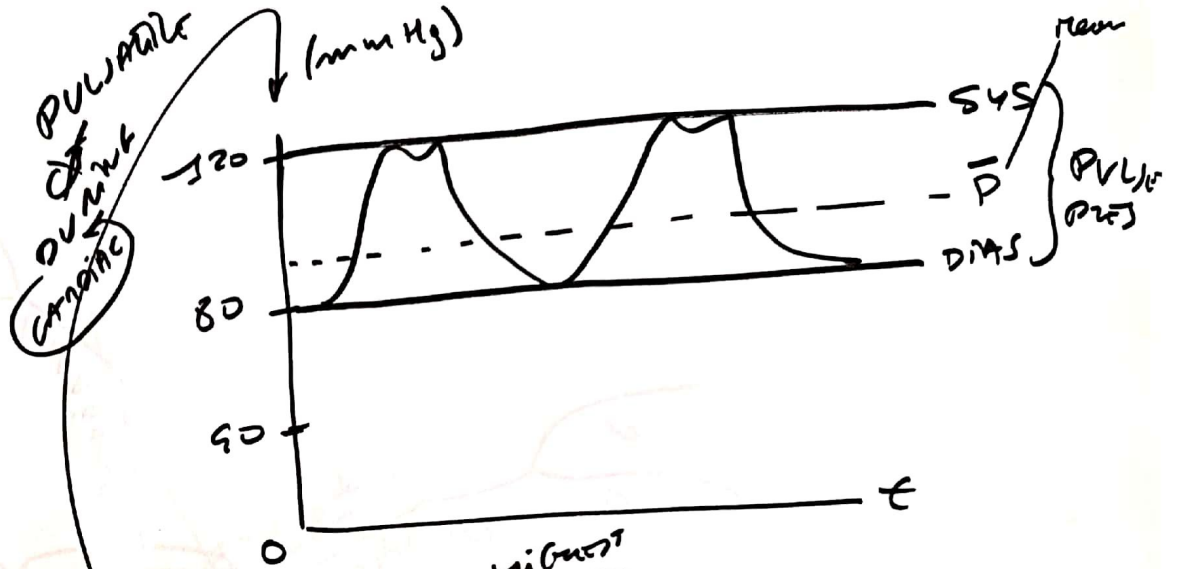
SERIES $R_T = R_1 + R_2 + R_3 + \dots +$

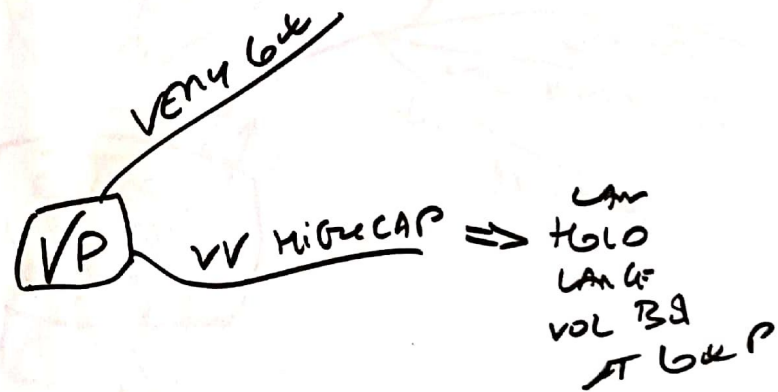
|| $\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \dots$

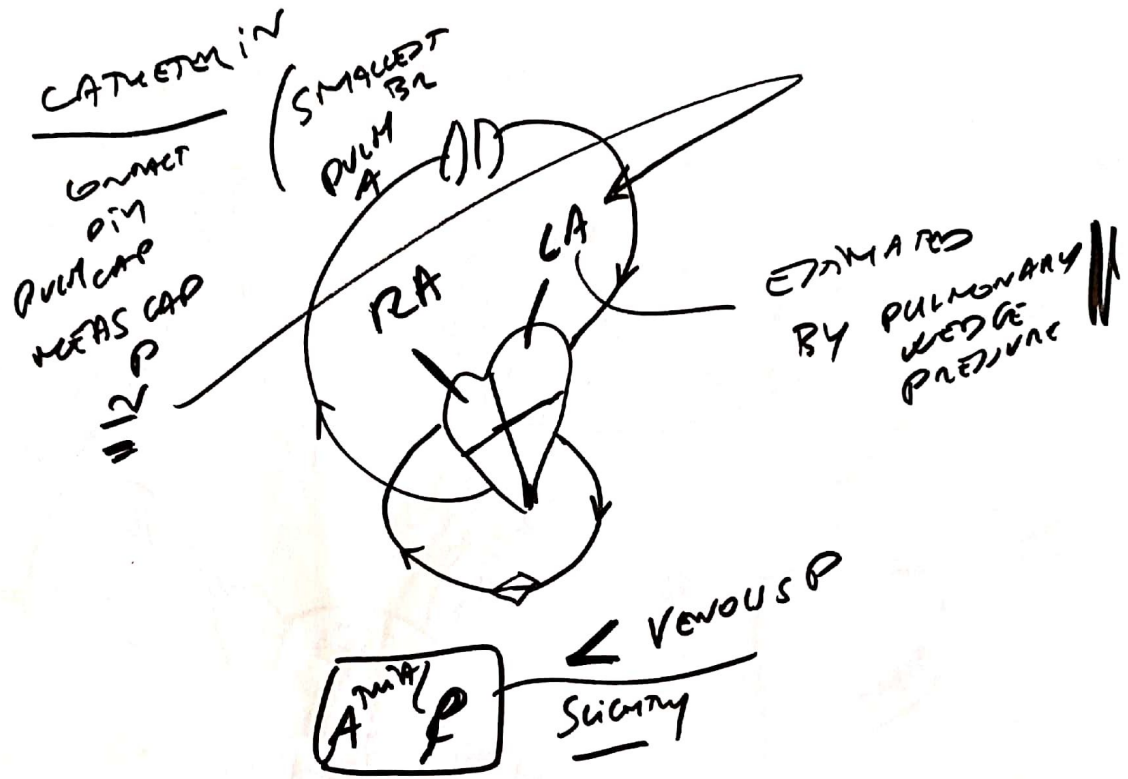


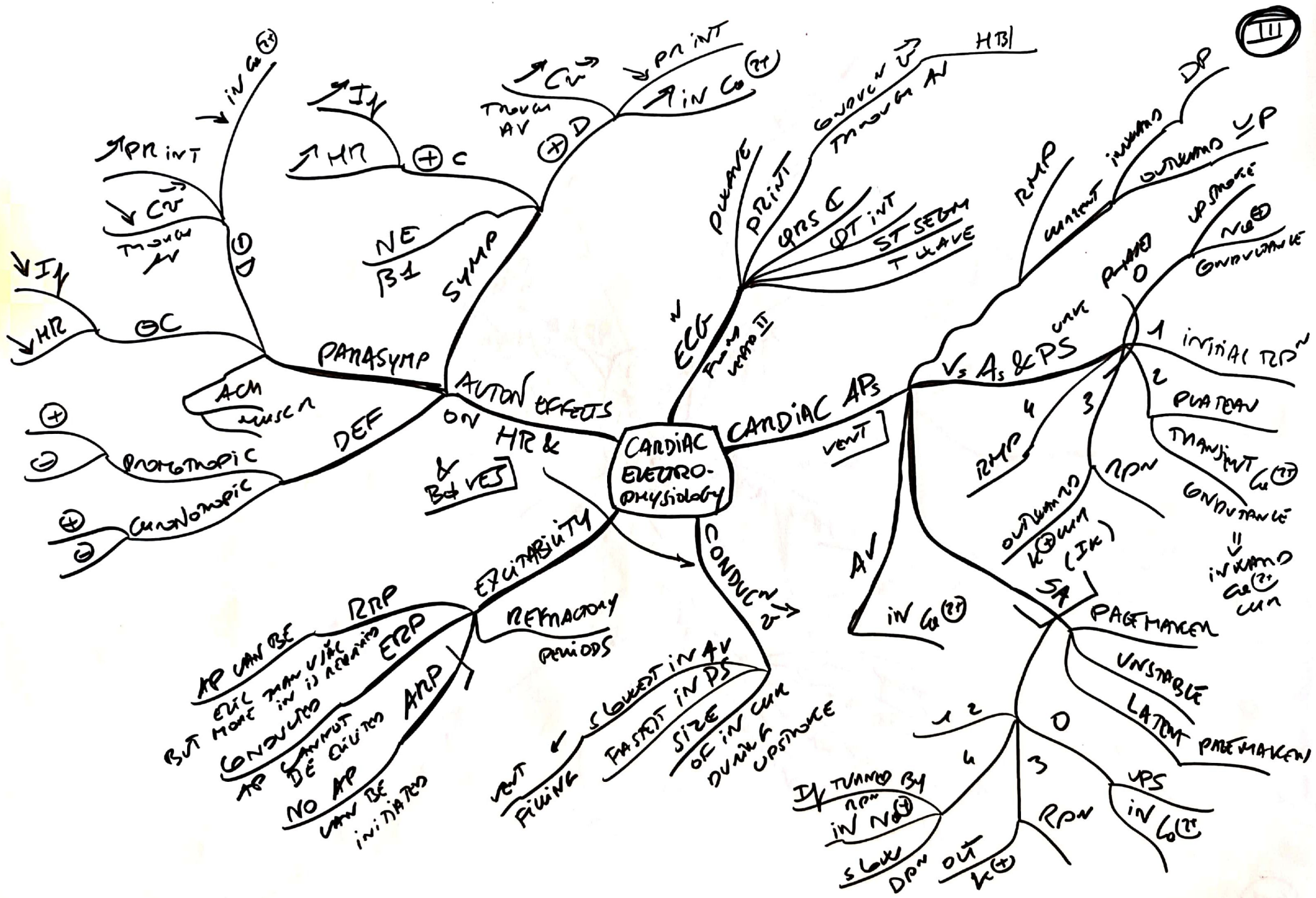


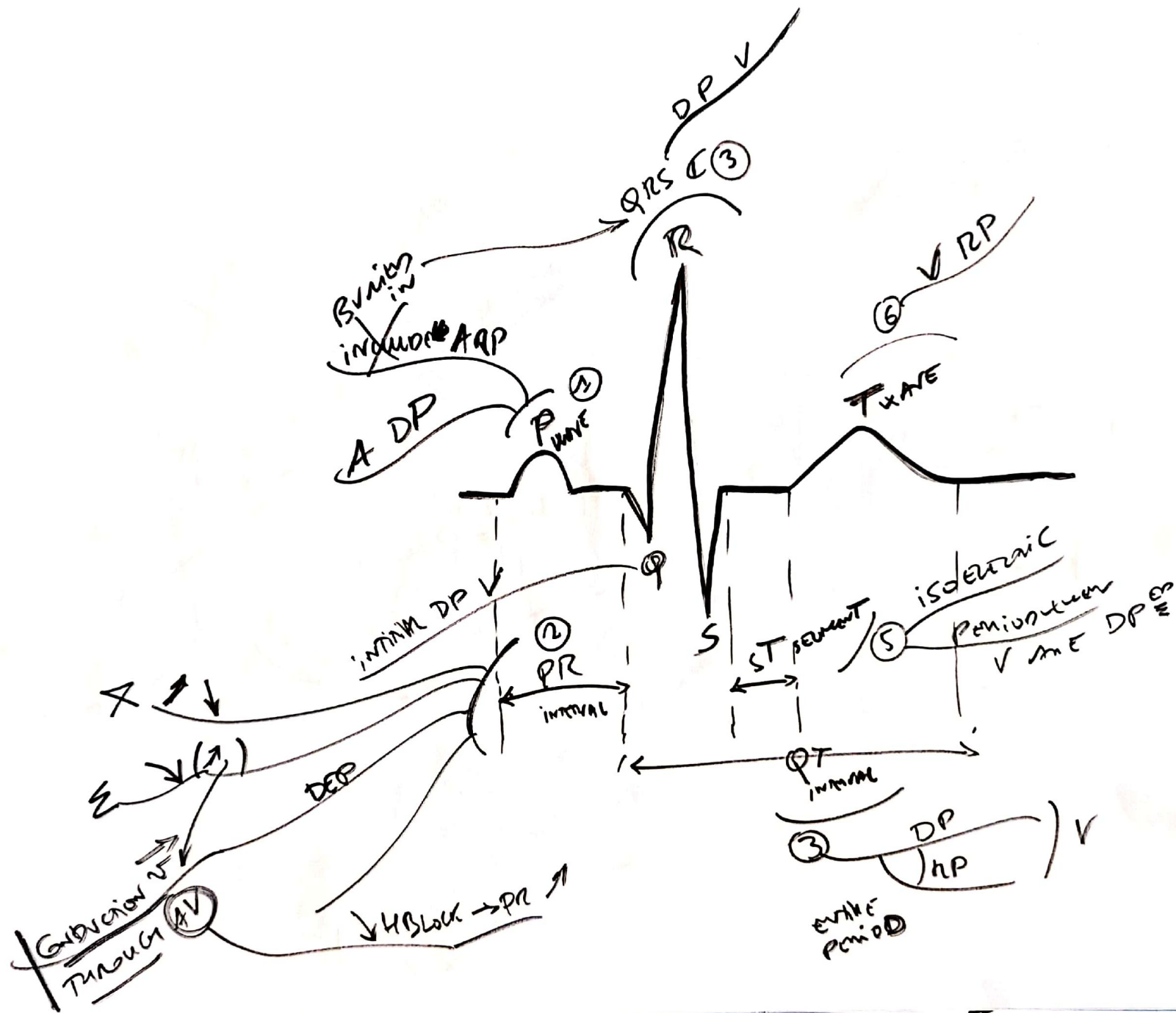
DIAS P + 1/3 PP

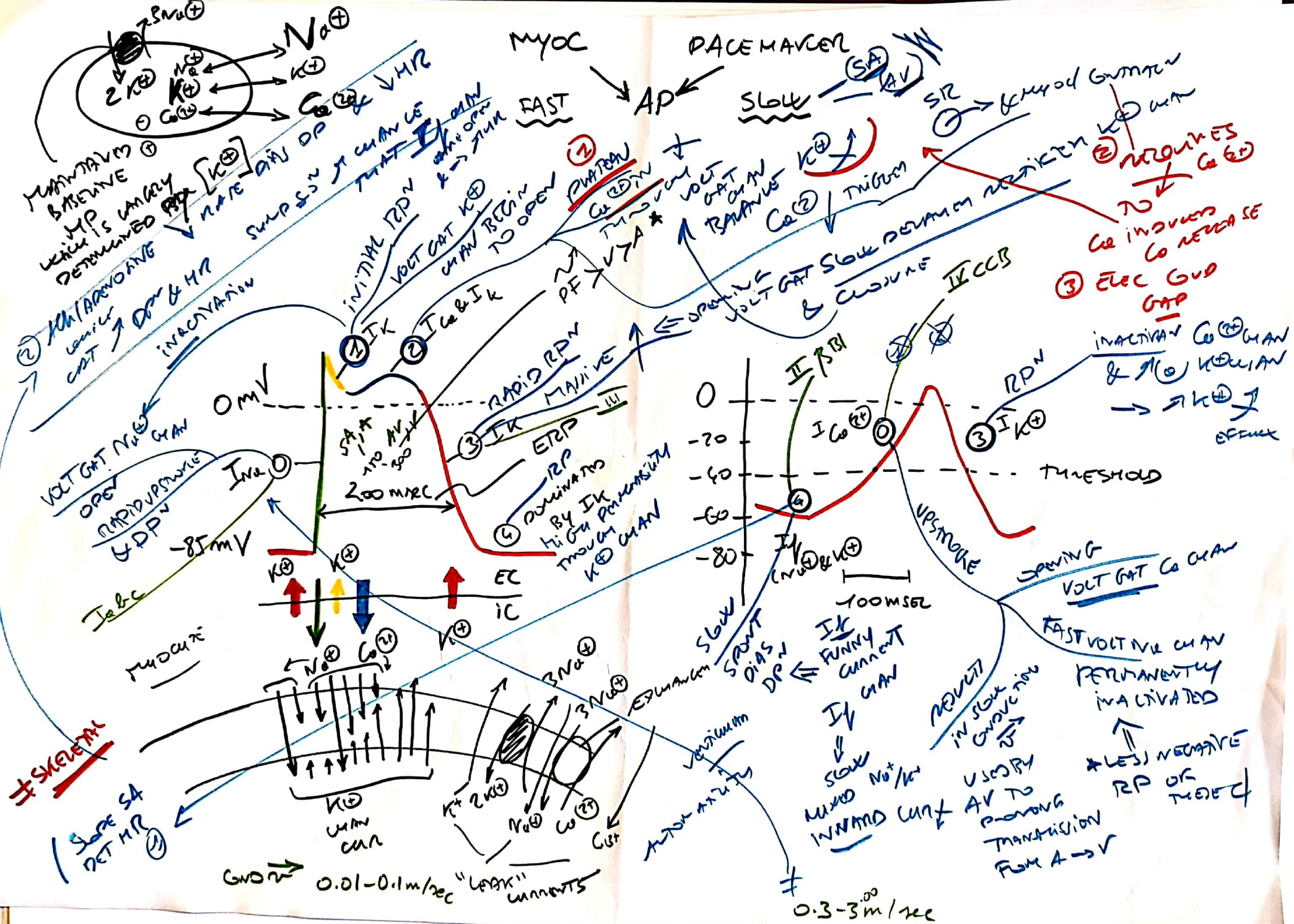


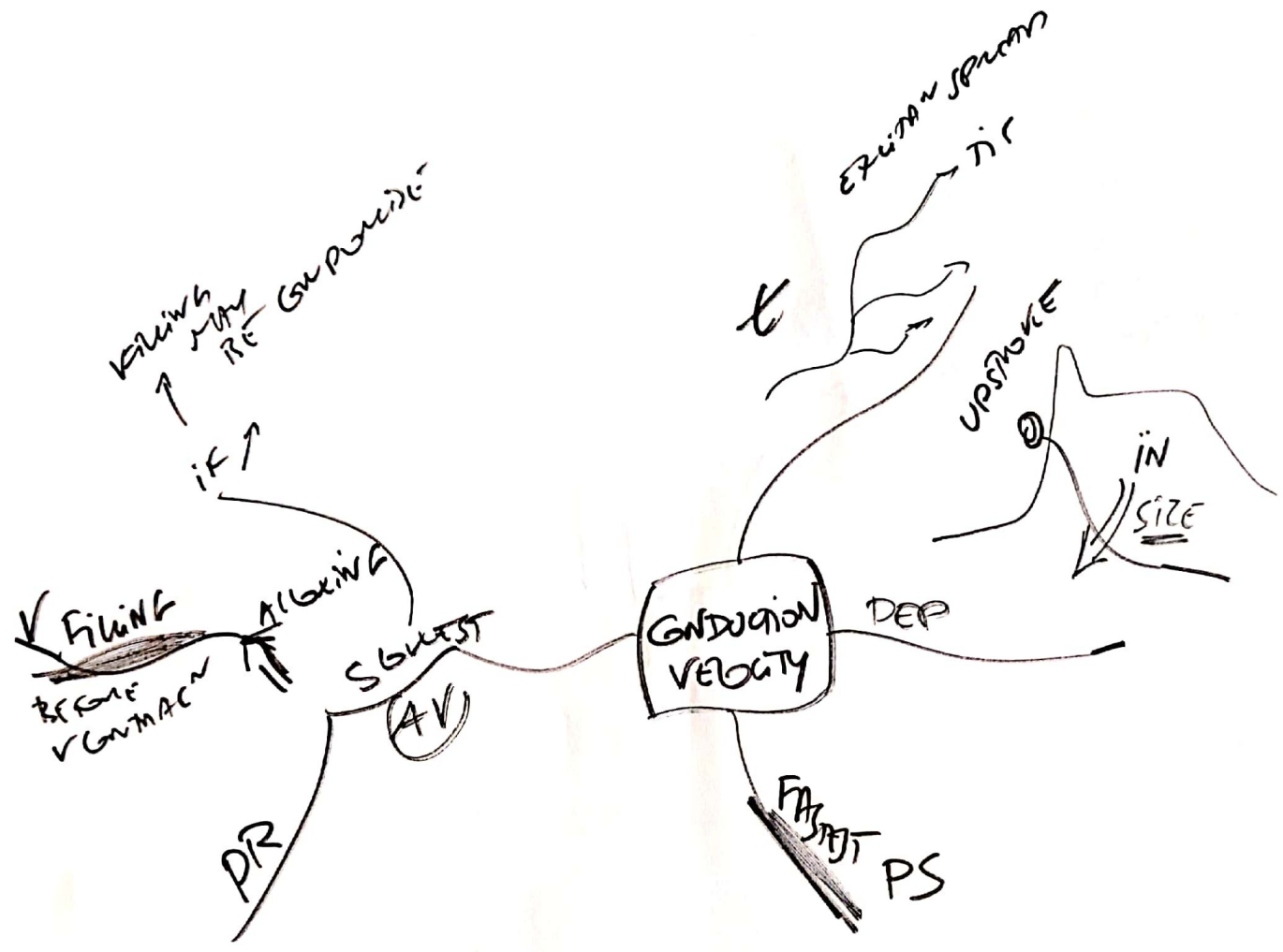












EXCITABILITY

Ability control
& to initiate AP

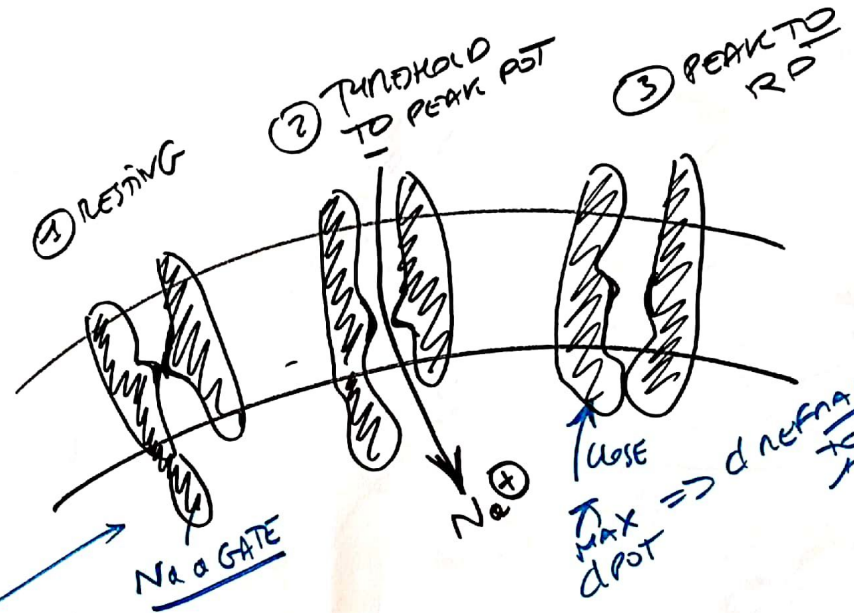
REFLECTS RECOVERY CURRENT
DATA THAT CHANNEL \downarrow IN

↳ GRACE AP

PERCY = REFRACTORY PERIOD

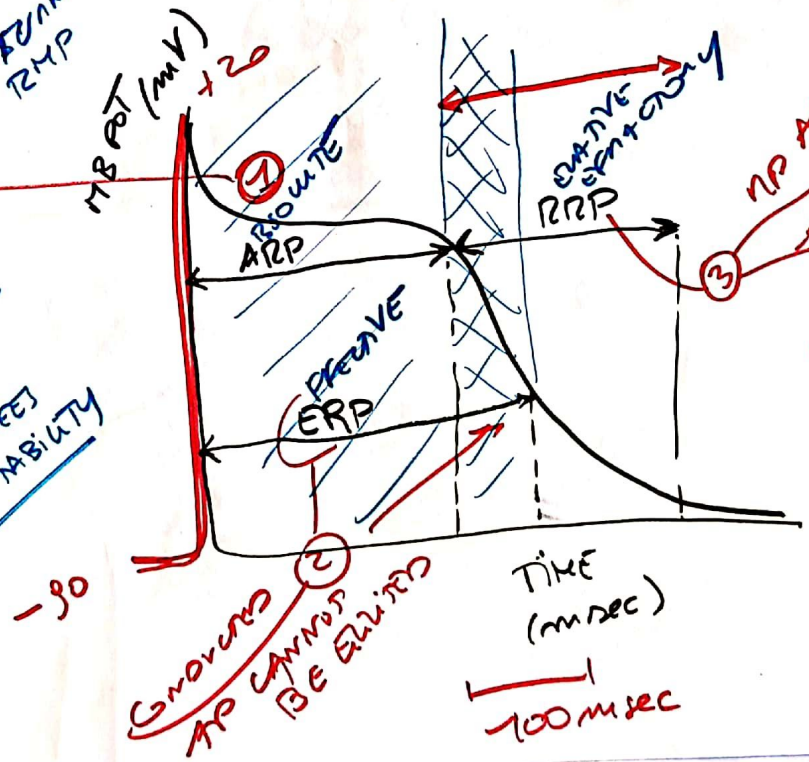
AP \swarrow DP \searrow IN

VOLT GATES INACTIVATED
GATES



REBOUND LEFT OF RESTING POTENTIAL
NO AP
NO CAN BE INITIATED
NO AP

NEED OPEN DURING R.P.W. AS & RETURN TO ITS R.M.P.
NO Na⁺ GATE NEED OPEN WITH K⁺ OF PHASE 2
3 DEGREES OF EXCITABILITY



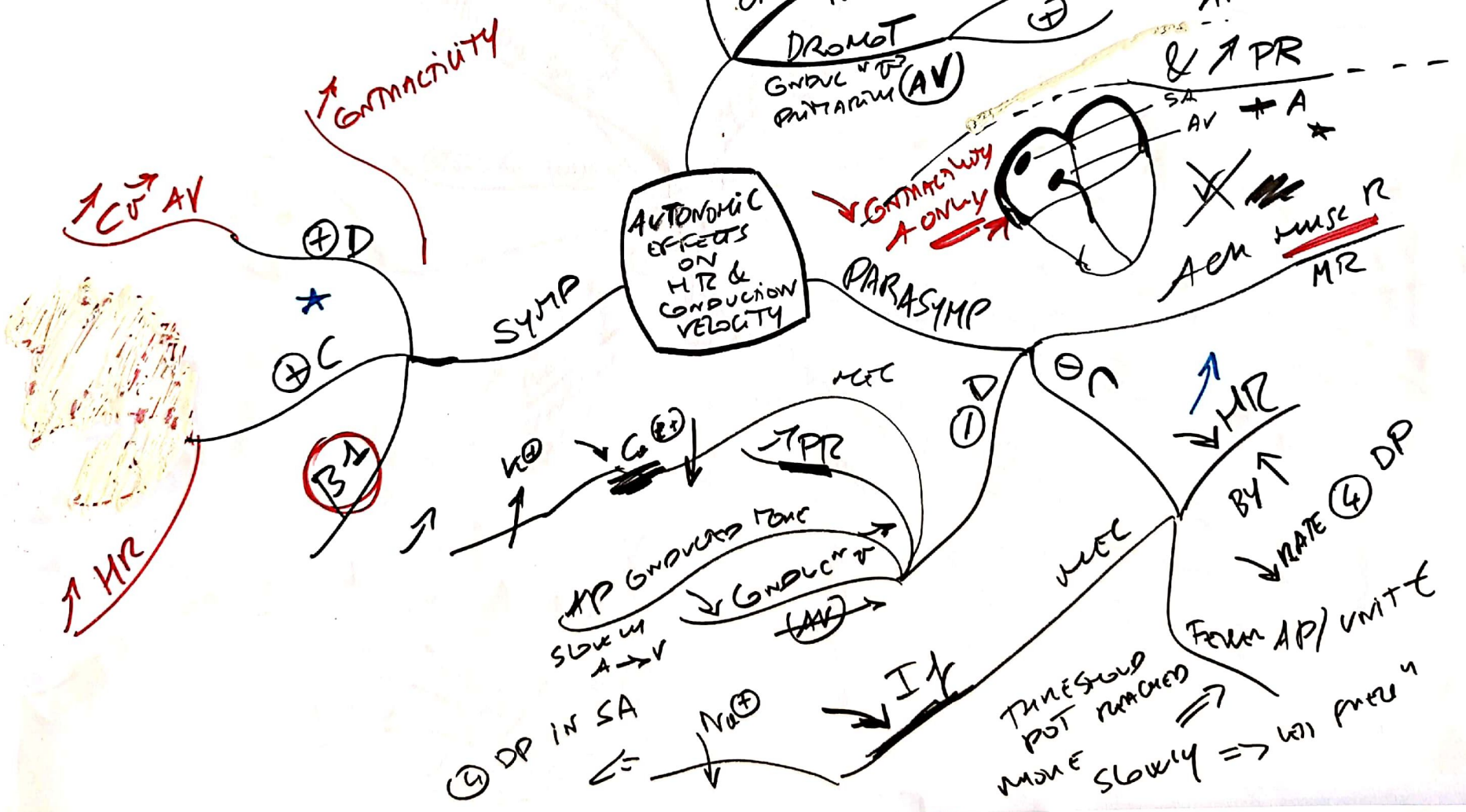
NO ALMOST COMPLETE BUT CAN BE EXCITED THAN V.V.M. REQUIRED IN VERT

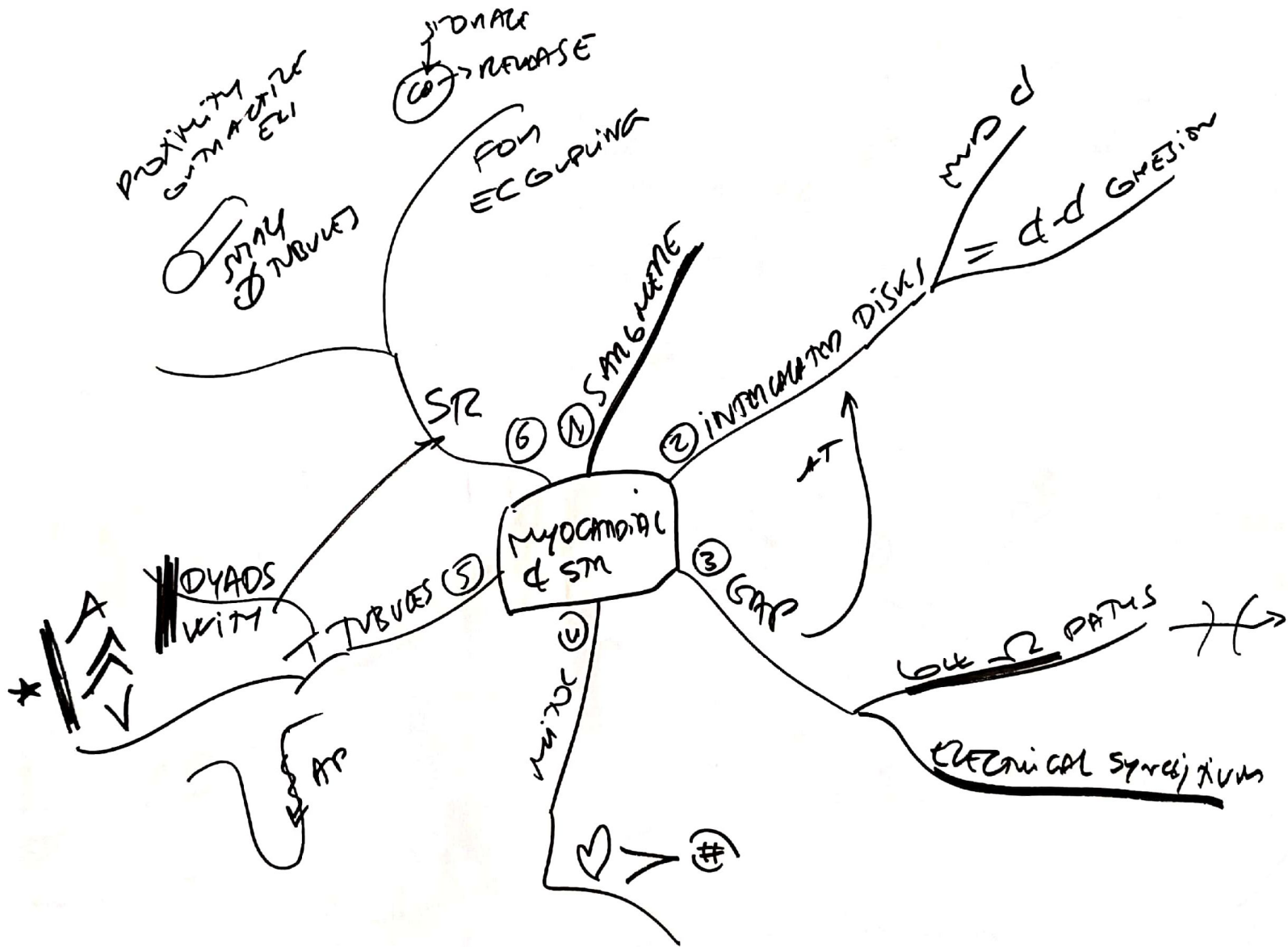
REFRACTOR PERIODS

ABSOLUTE EFFECTIVE RELATIVE

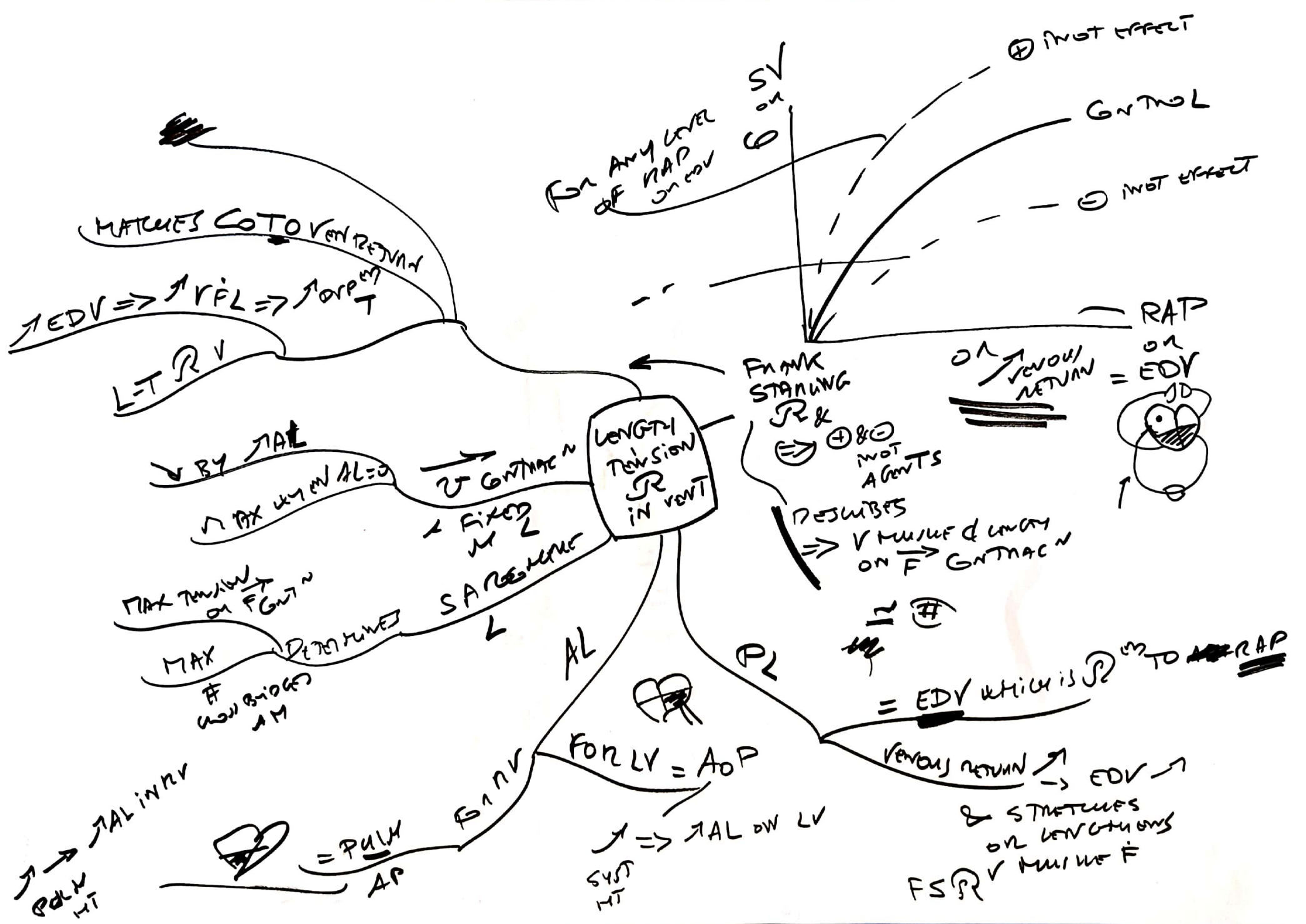
MOVEMENT AP CANNOT BE EXCITED

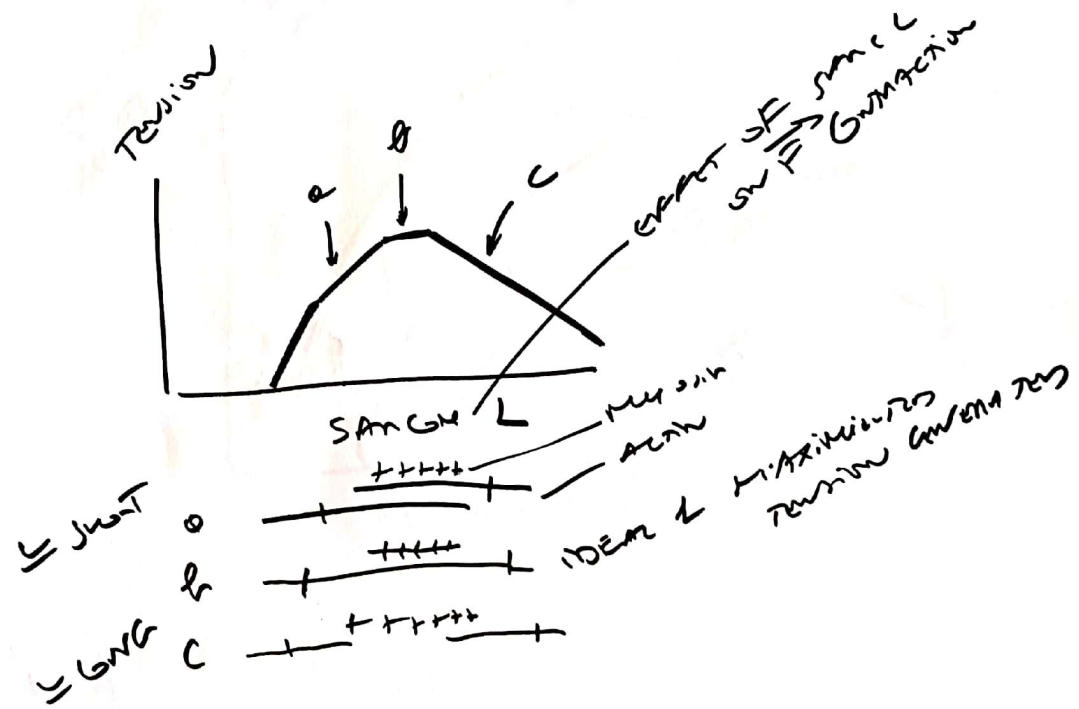
VASC SM
 SKIN SPANIC C x 1
 SPEC M R B2



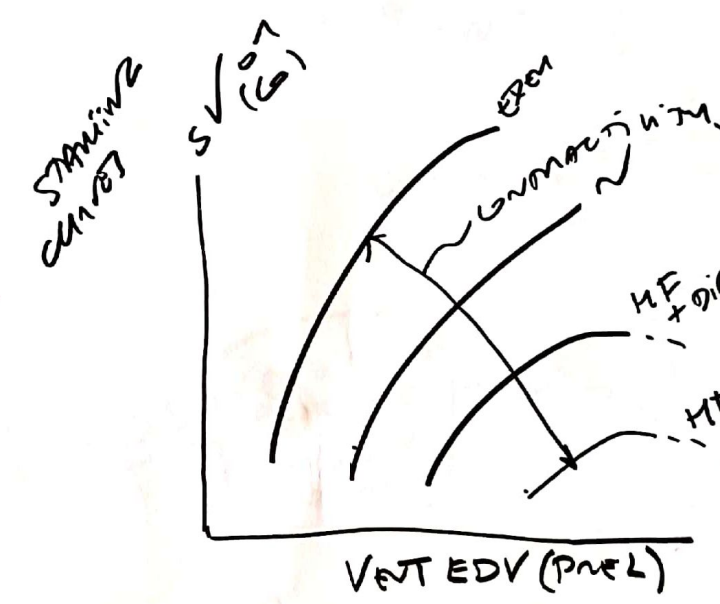






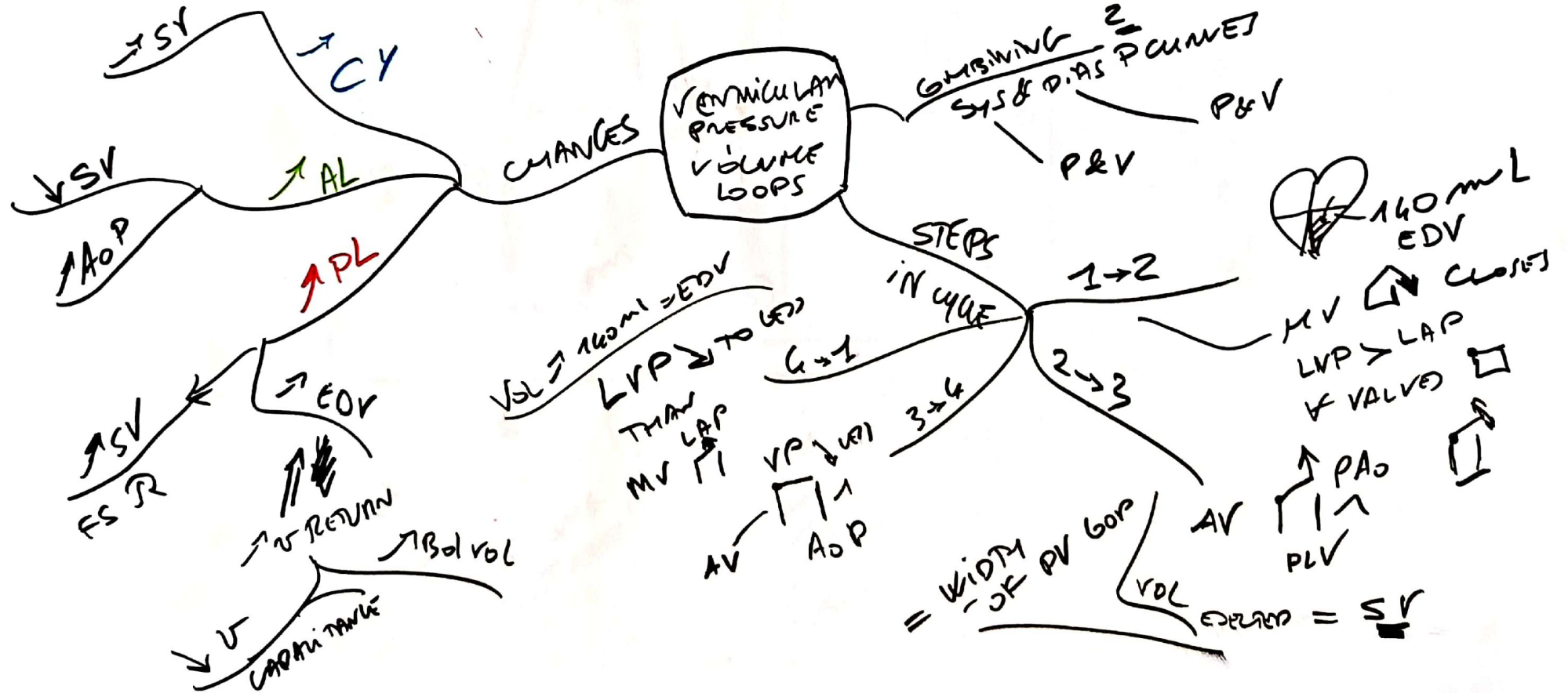
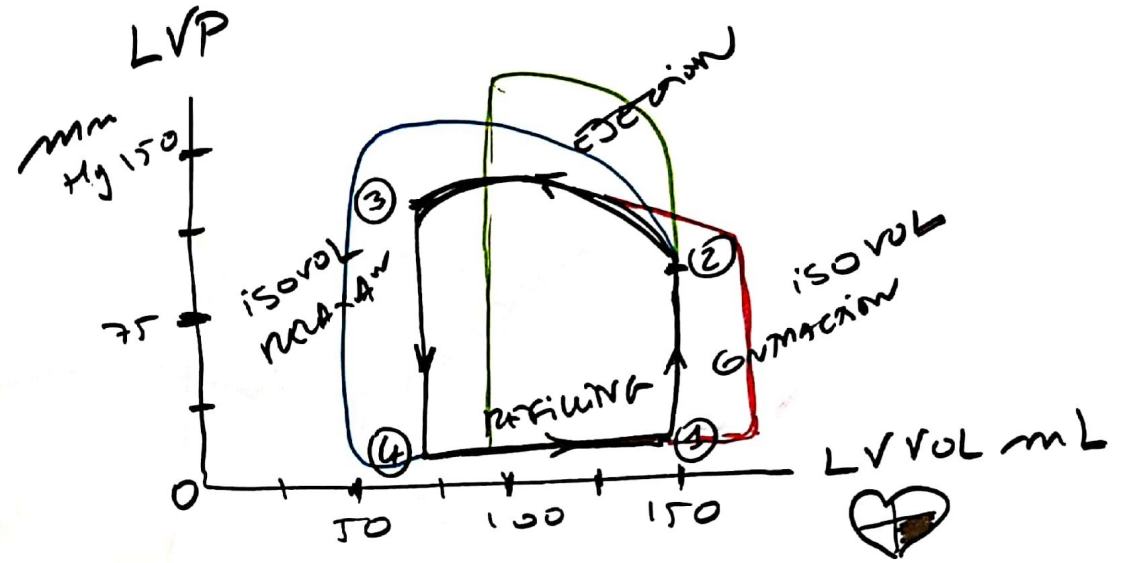


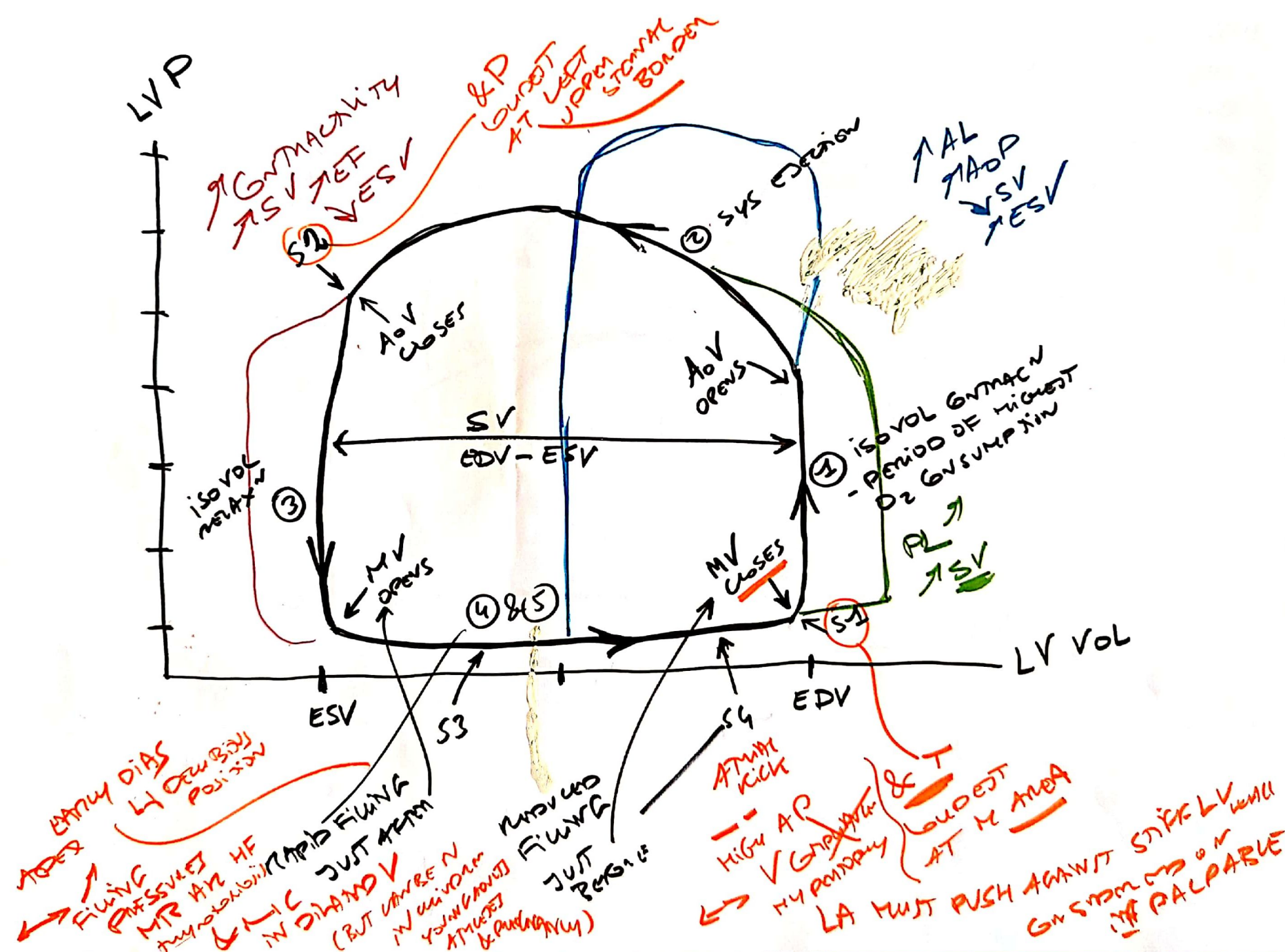
→ GUTTEN
 α ED LOW
 LOW
 M FIBER



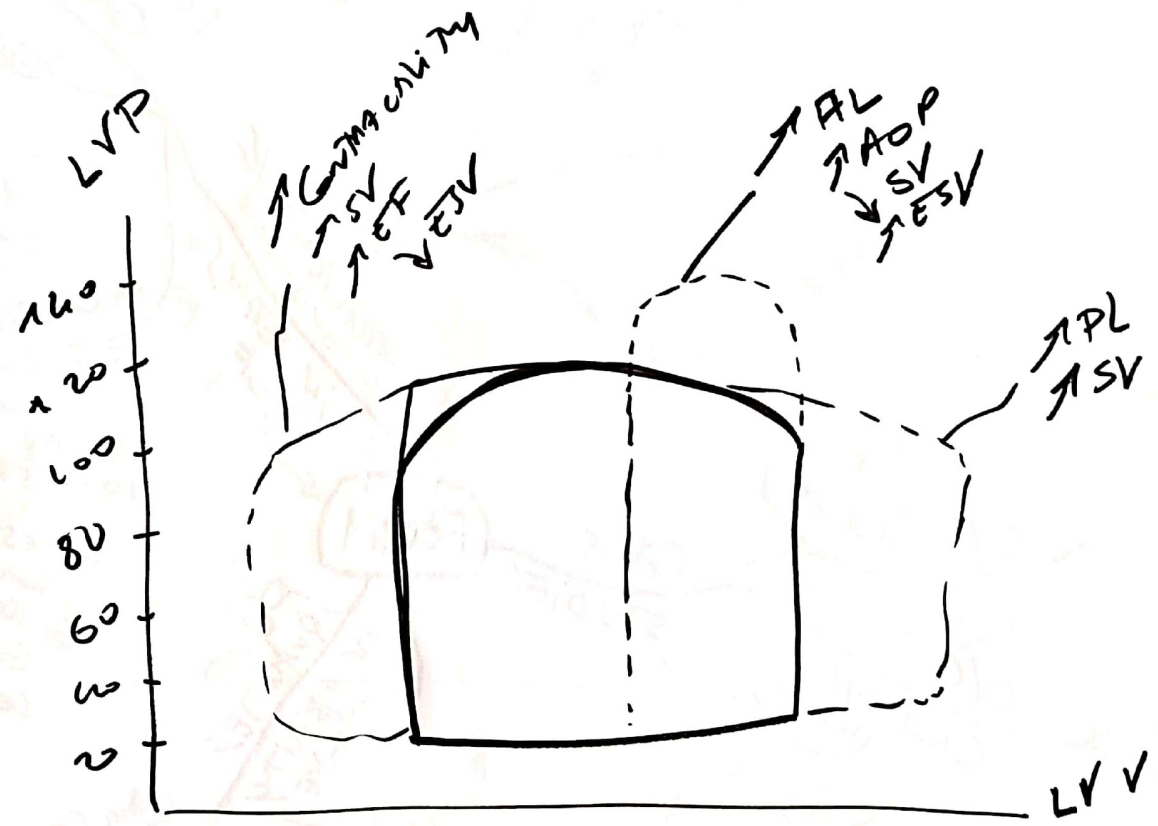
- CAT ⊕ INOTROPES
 EG
- ↓ Func M MOC
 - ED (M)
 - β TSI (ACTIV)
 - NON DMPR Co
 - DMAP
 - COMMISSION

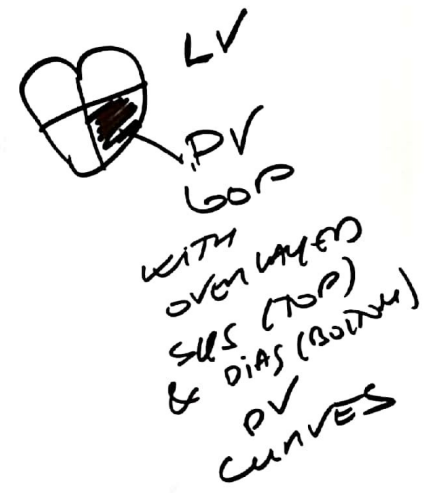
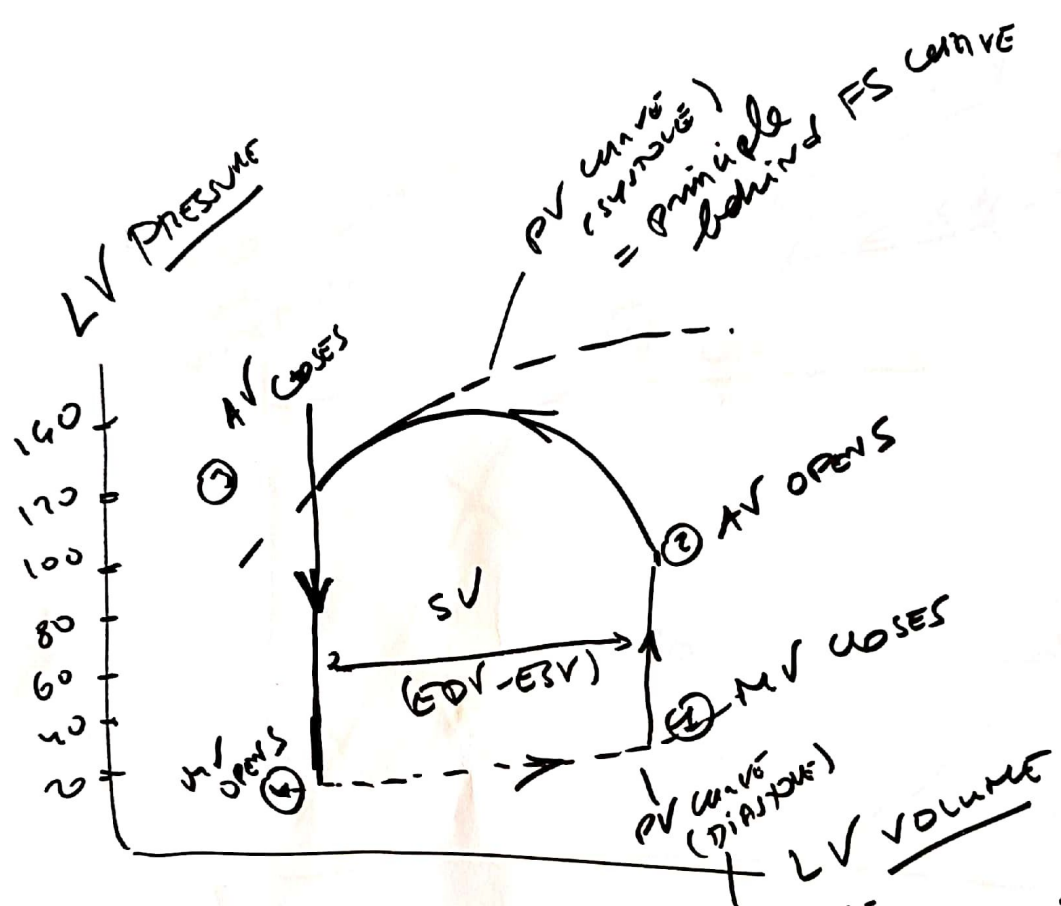
STAINING
 CMT



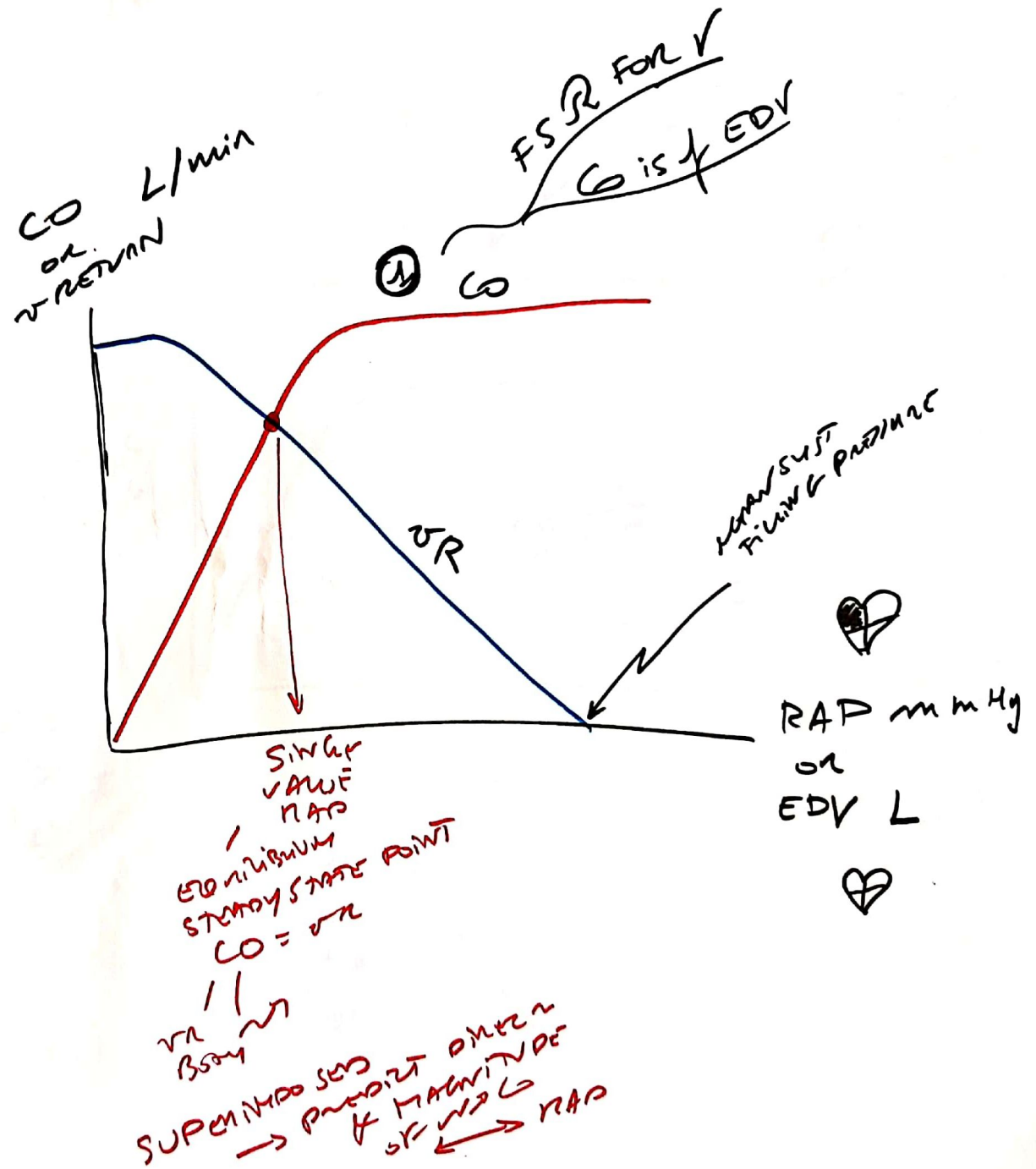


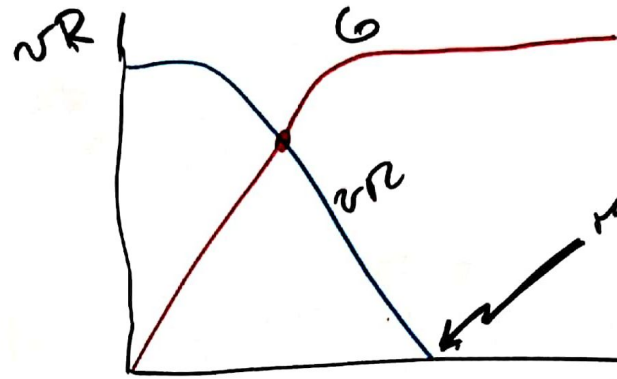
EFFECTS
 ON
 CONTINUITY
 FROM LAD
 &
 FROM AAD
 ON PVA
 ON COP



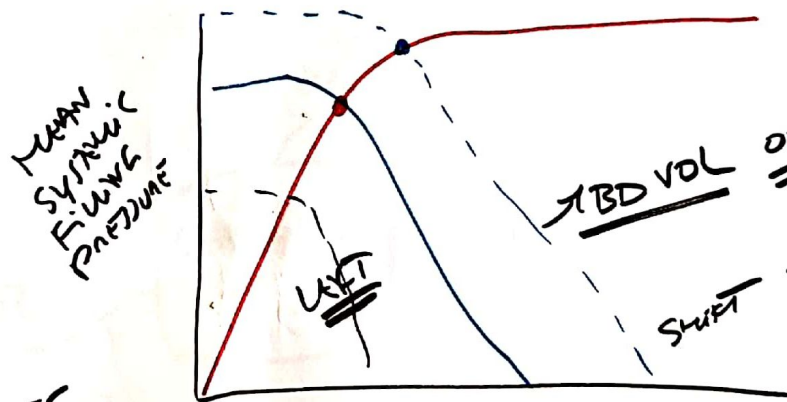


COMPLIANCE CURVE FOR VENT
 → PRELOAD ON →
 ↑ UP





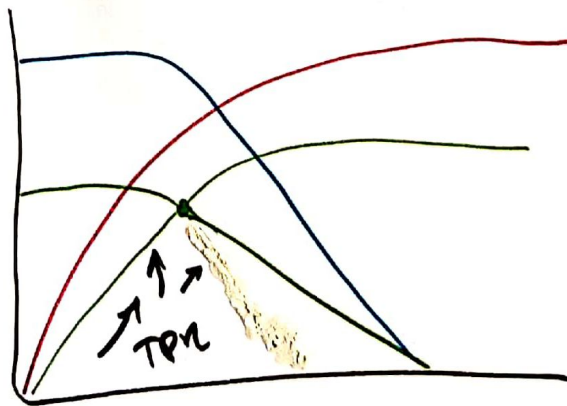
NO FLOW
 EXPENSIVE
 $G & VR = 0$
 $P =$
 + THROUGHOUT
 CV SYSTEM



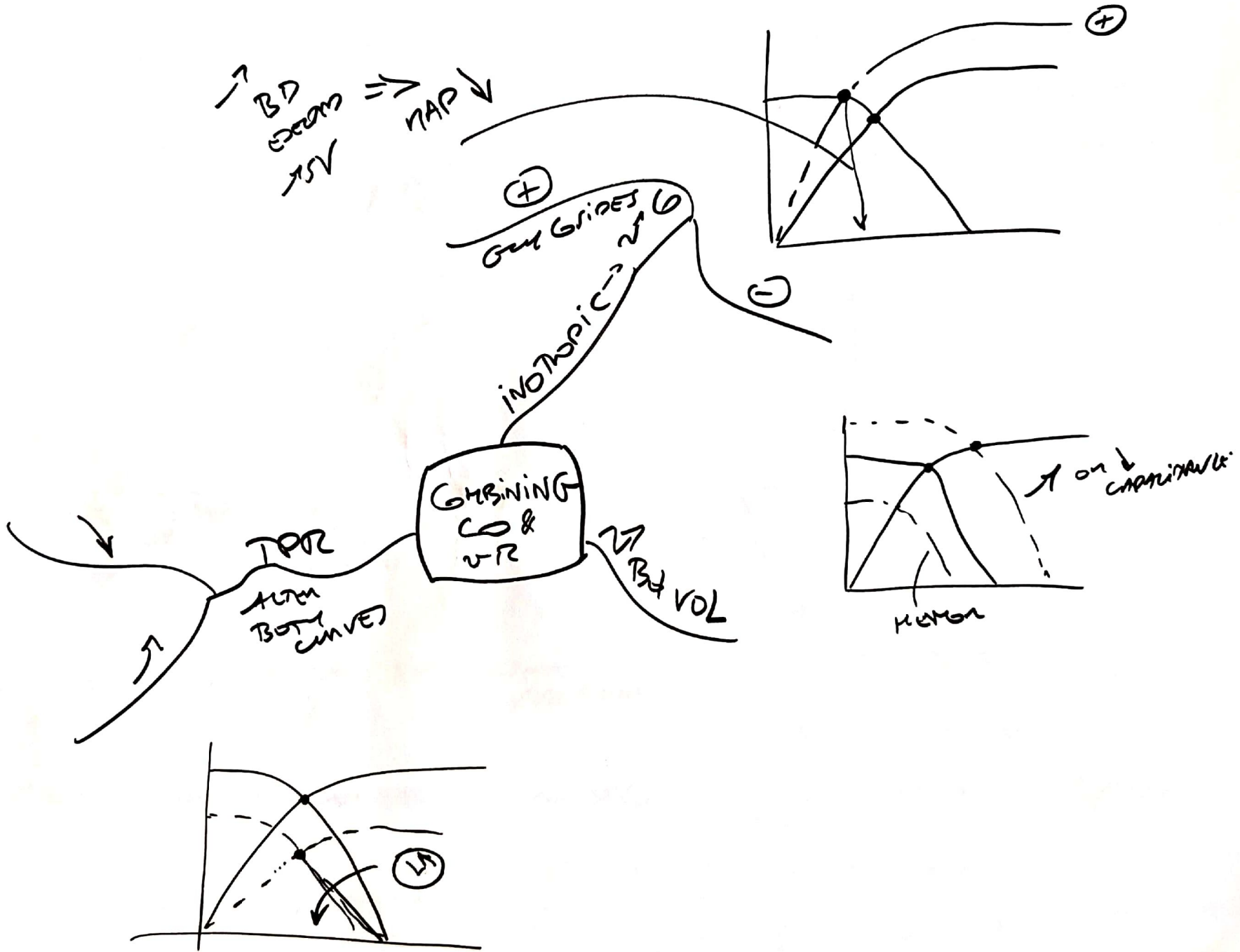
MEAN SYSTEM FILLING PRESSURE

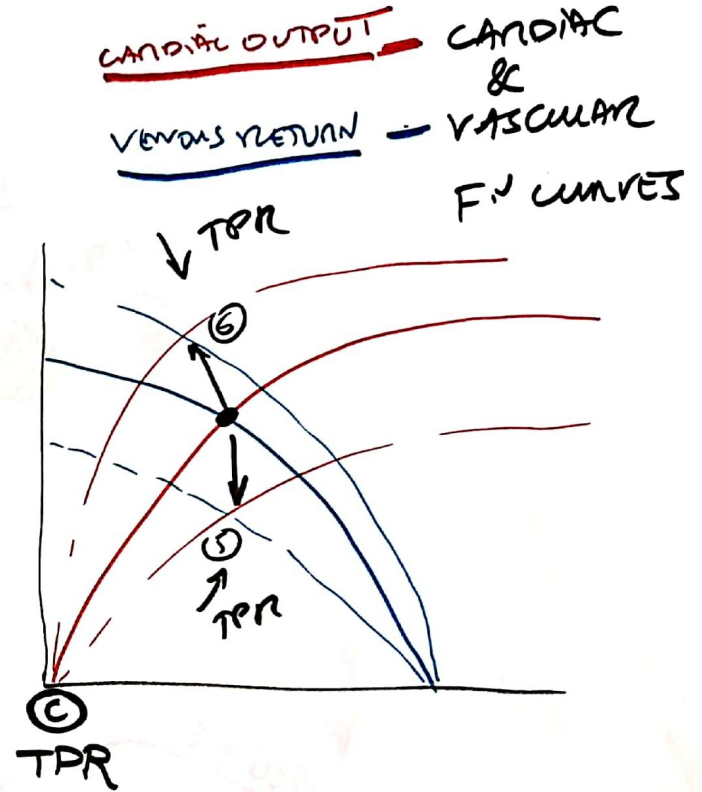
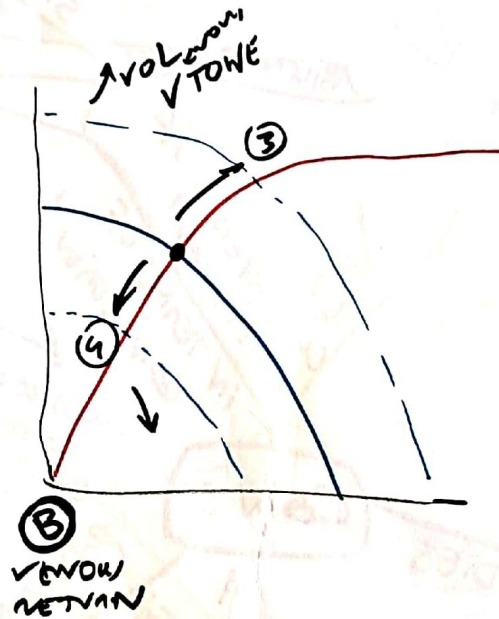
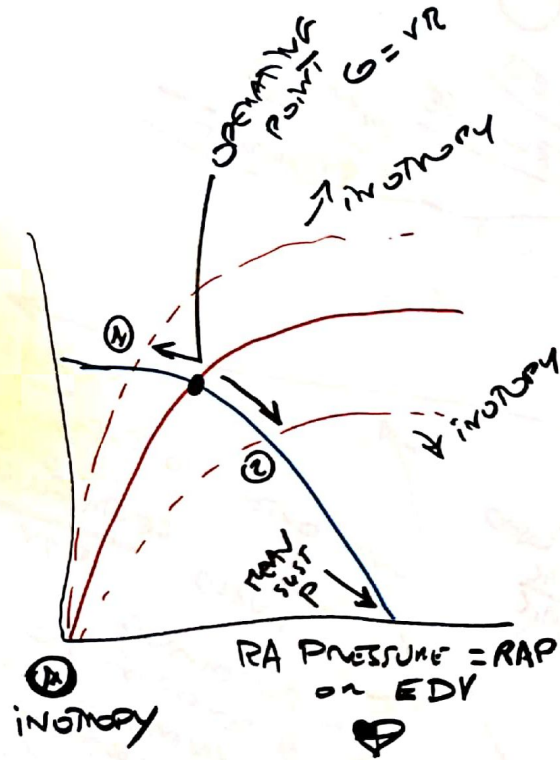
↑ BD VOL ON ↓ V CAPACITANCE
 BUT ~~VR~~ → AA
 SHIFT TO RIGHT

R ANTENIDET
 ⇒
SLOPE



- ② clockwise ↓ TPR
- ⑤ VC AD^o





(A) \rightarrow G = VR \rightarrow Δ LV END SV \rightarrow ACTING CO/VR & RAP

(B) \rightarrow CIRCULATING VOL \rightarrow \rightarrow RAP \rightarrow \rightarrow SV \rightarrow \rightarrow G

(C) \rightarrow TPR \rightarrow \rightarrow G \rightarrow \rightarrow RAP INADJUSTABLE TO MAXIMIZE G OR COMPENSATORY

1 CAT DIGOXIN EXCITE (+)

2 HF + \downarrow EF MANUAL JUMP (+)

3 FLUID INFUSION (+)

4 \uparrow HEART SPINDLING

5 VASOPRESSIN (+)

6 EXCITE / AV SHUNT (-)

\rightarrow OESW IN TANDEM, MAY REVERSE

$$EF = \frac{SV}{EDV}$$

55%

NORMAL
SWIMABILITY

FRACTION
EDV
EJECTED
IN EACH
SV

EF

SV



$$= EDV - ESV$$

$$CO = SV \times HR$$

$$SV = EDV - ESV$$

$$EF = \frac{SV}{EDV} = \frac{EDV - ESV}{EDV}$$

INDEX OF VENT GNT Y
 (↓ SYS HF
 US Y N IN DIA CHF)

$$CO = SV \times HR$$

EARLY STAGES EXERCISES
 MAINTAINED BY ↑ HR & ↑ SV
 LATER ONLY SV PLANS

FIX
 PWN

$$CO = \frac{NAE \text{ OR } GNS^N}{(\text{Annual} \text{ OR } GNT - \text{VET} \text{ OR } GNT)}$$

DIA S STARTS WITH ↑ HR
 (EG VENT TRUNC) → ↓ DIA FLOW & E
 → ↓ SV
 → ↓ CO

$$PP = SBP - DBP$$

OC SV I/O

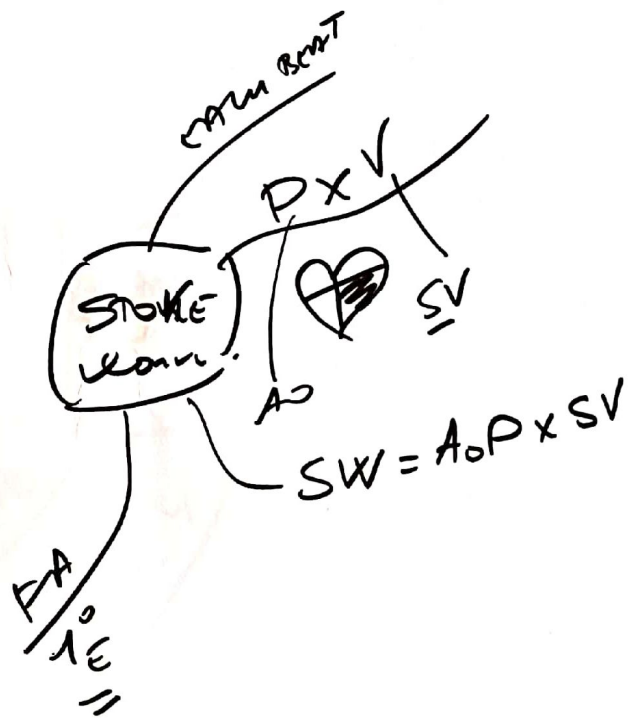
ANNUAL
 COMPLIANCE

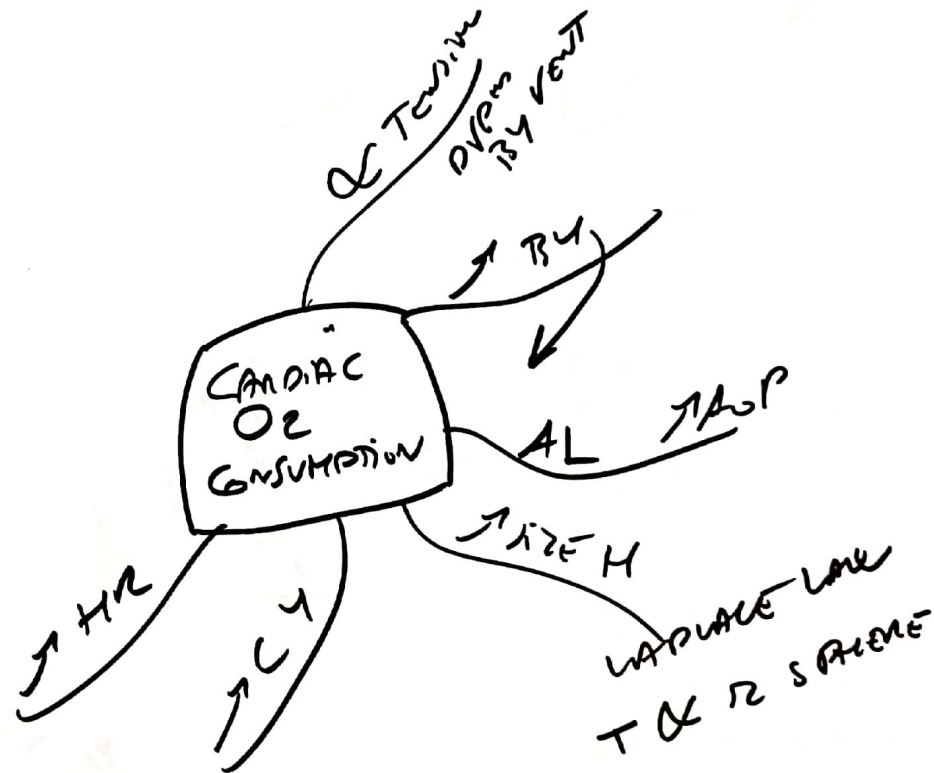
- ETHYL, AD REGVNG, AD STICKING
 (ISOLATED SYS HT ELASTIC) OSA
 (SYMPTOMS) AVENIA
 ESEM (MAX) HT
- ↓ AD STEN CAMDOR SHOCK
 VMS TAMPOWAE
 ADVANCED HF

$$MAP = CO \times TPR$$

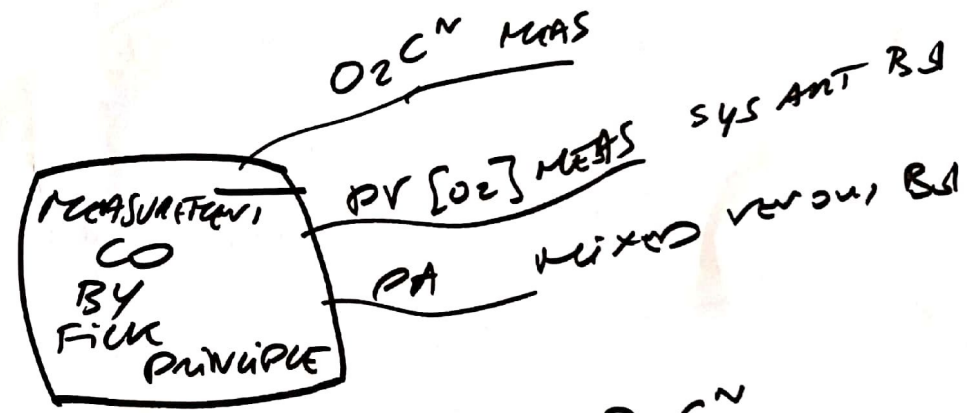
$$\text{AT RESTING HR} = \frac{2}{3} DPP + \frac{1}{3} SBP$$

$$= DBP + \frac{1}{3} PP$$





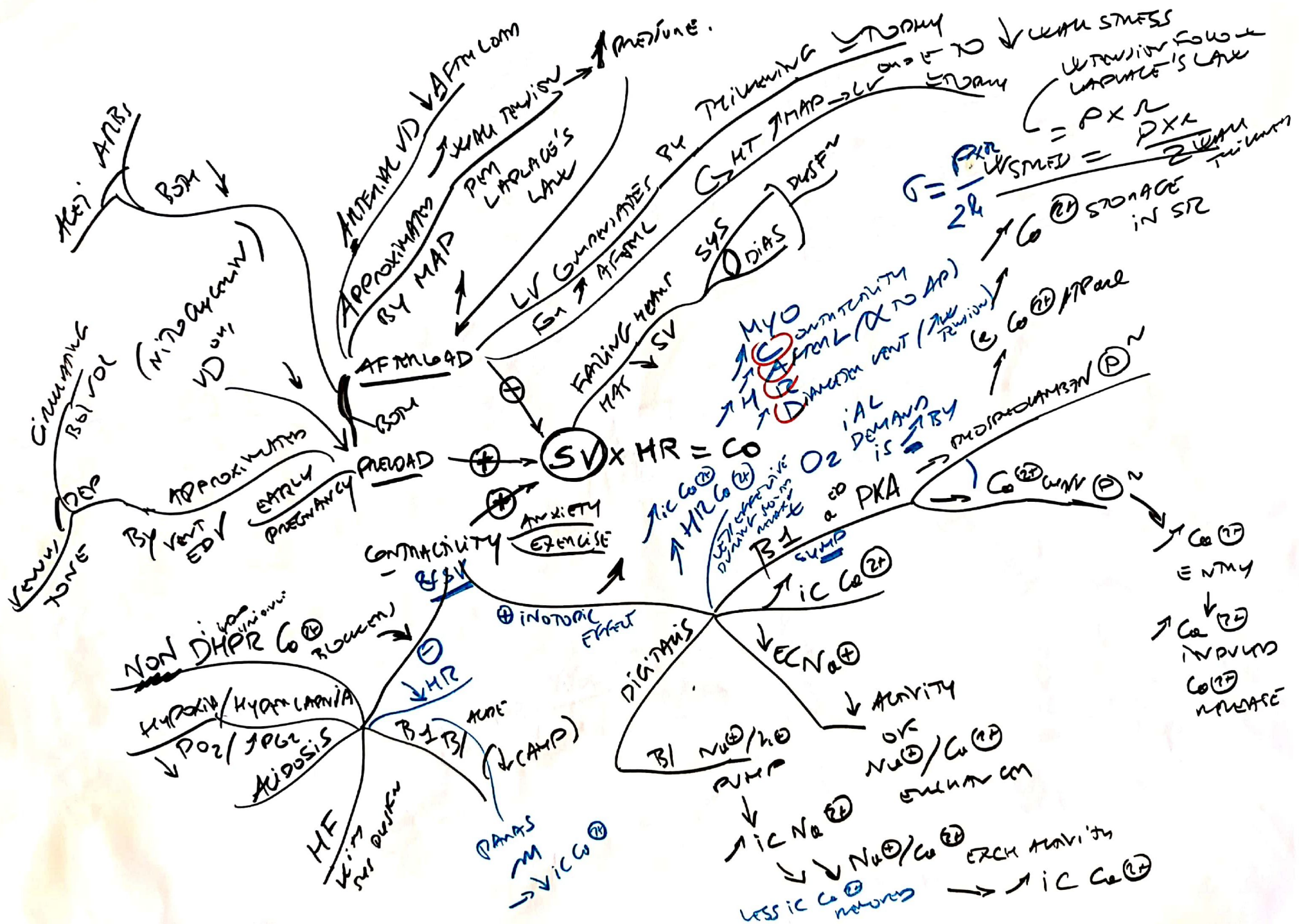
$$CO = \frac{O_2 \text{ CONSN}}{[O_2]_{PULM} - [O_2]_{PA}}$$

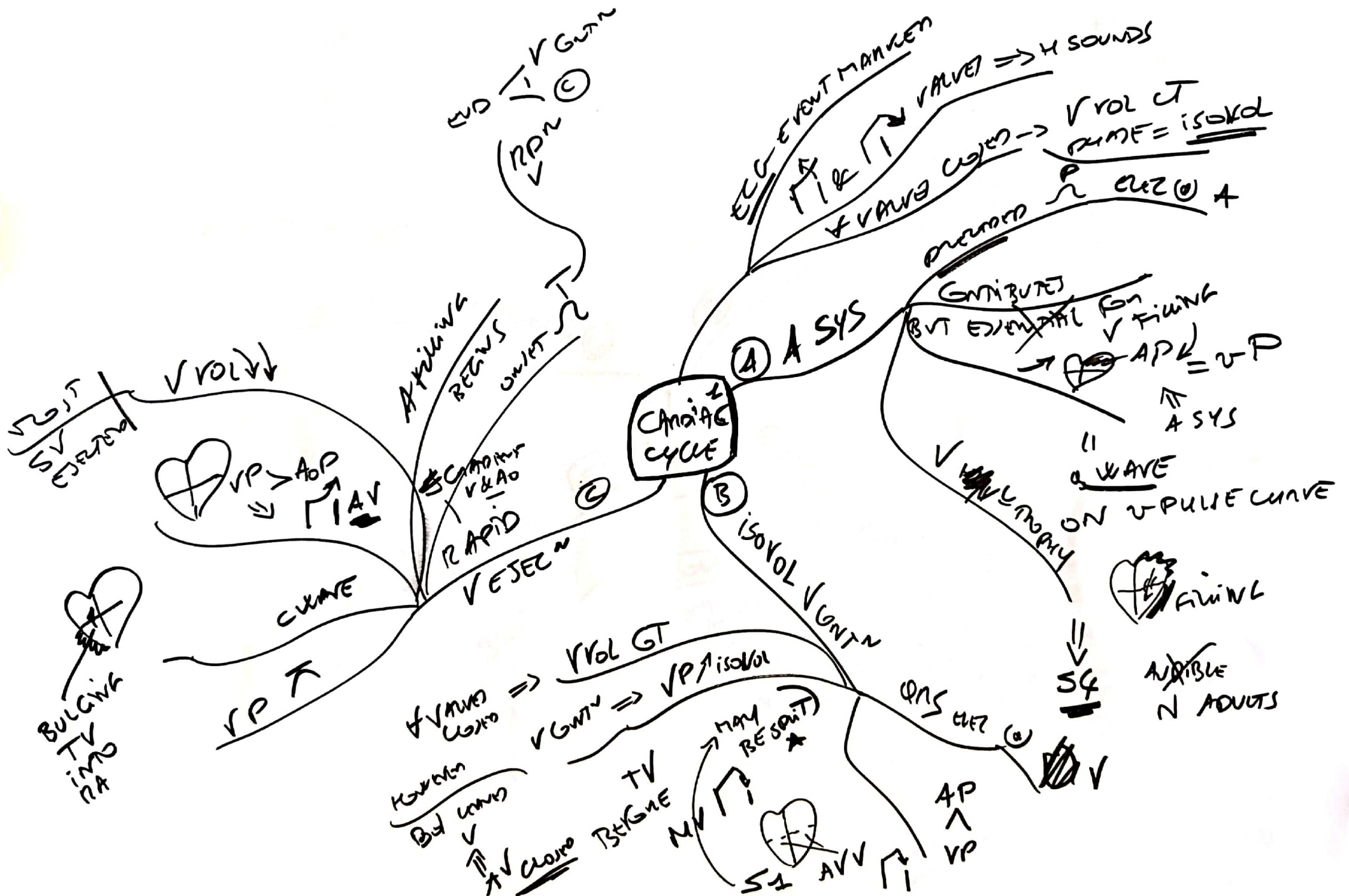


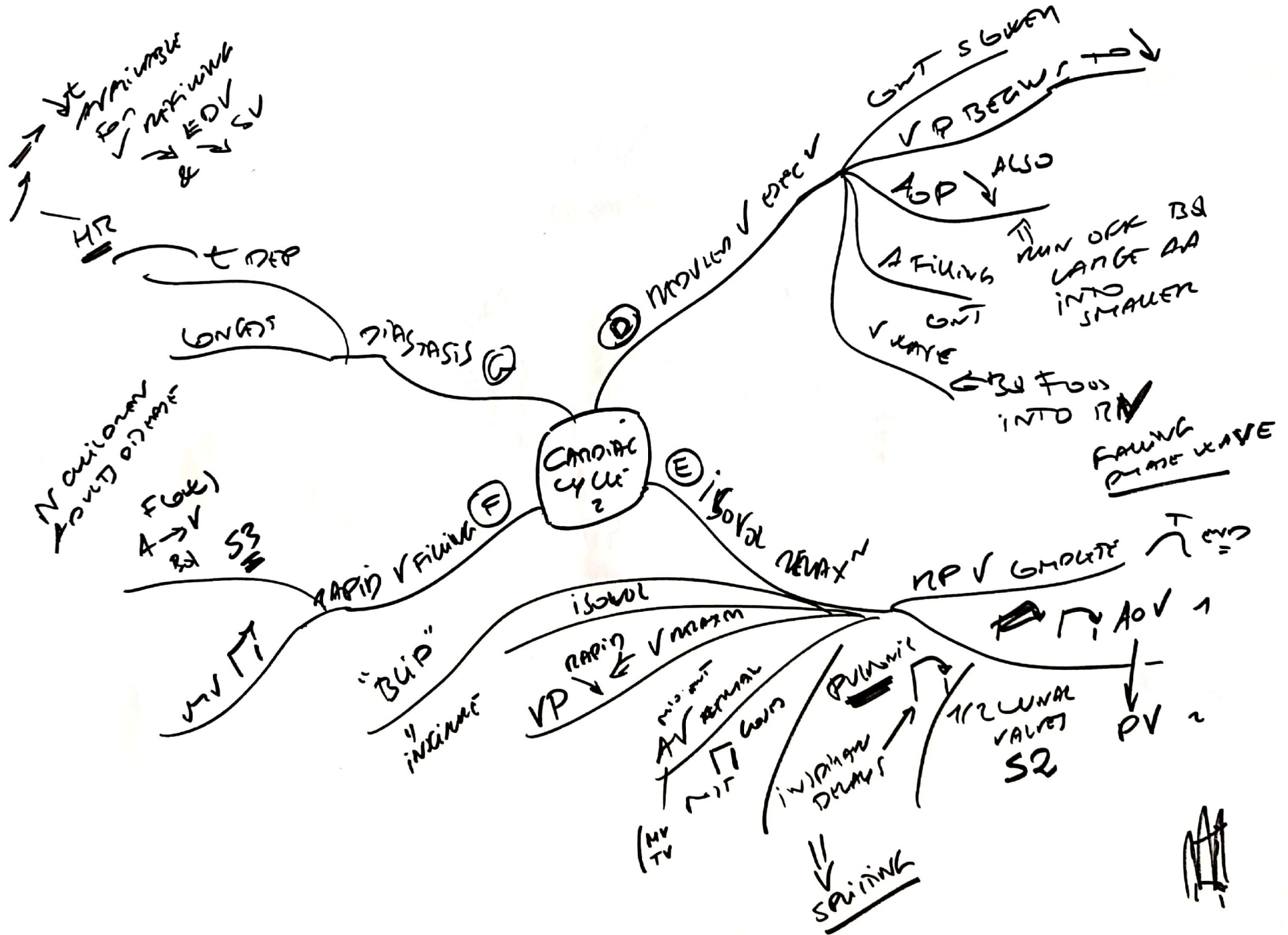
$$CO = \frac{250}{0.2 - 0.15} = 5000 \text{ mL/min} = 5 \text{ L/min}$$

$$SV = \frac{CO}{HR} = \frac{5000}{72} = 69.4 \text{ mL/BEAT}$$

70 kg O_2 CON
 250 mL/min
 0.20 mL O_2 /mL
 0.15
 HR 72 BEATS/min







NORMAL
CARDIAC
PRESSURES

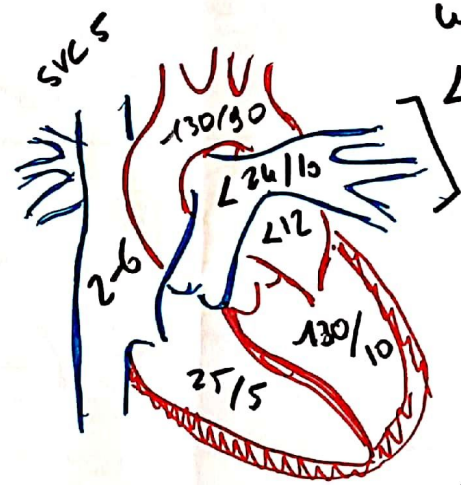
PA waveform

GOOD APPROXIMATION
OF LA PRESSURE

MITRAL
STENOSIS
PCWP > LV
END DIASTOLIC

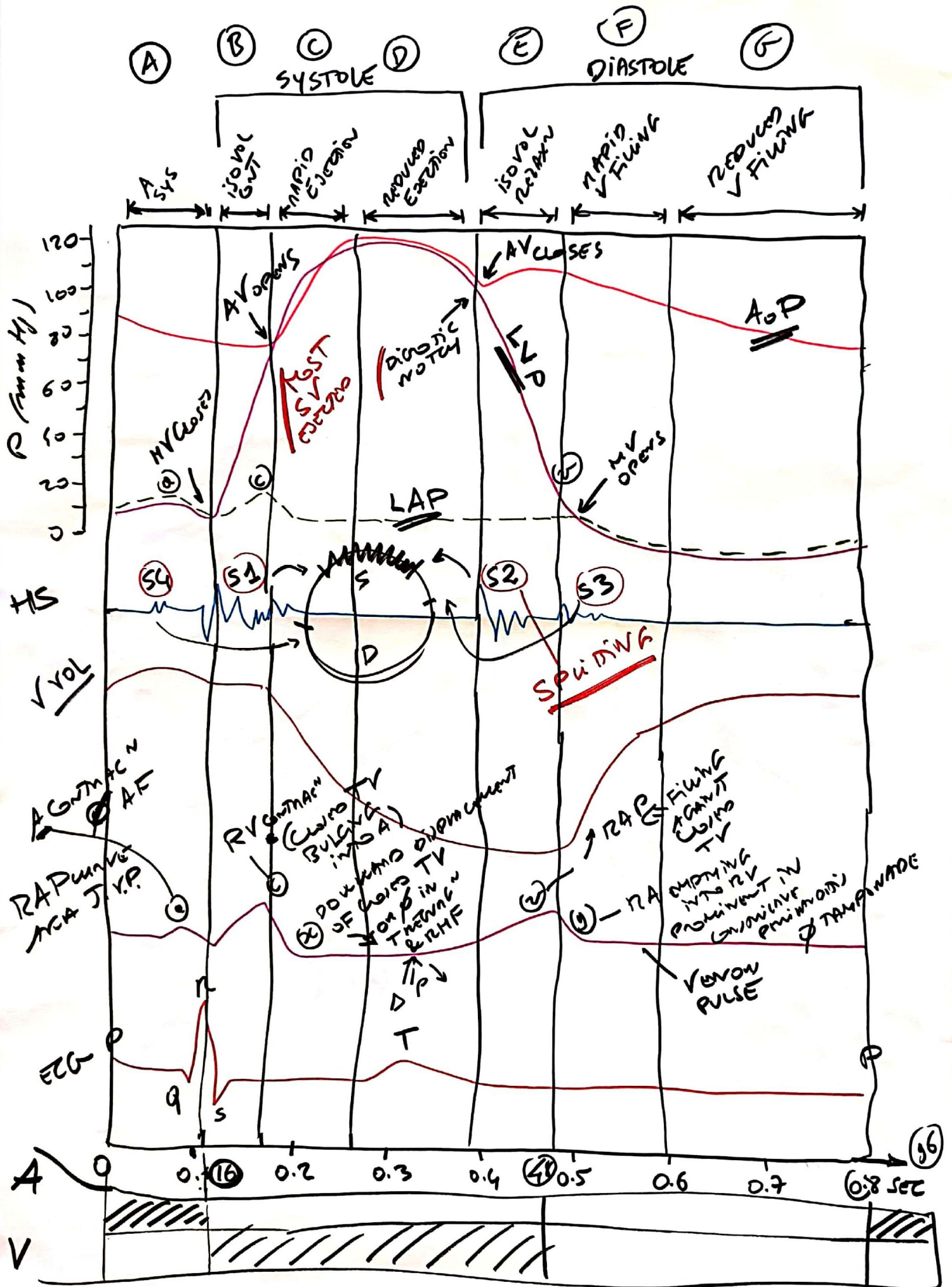
MWAS
PULM
A CATHETER
(SUKAN-GAUZ)

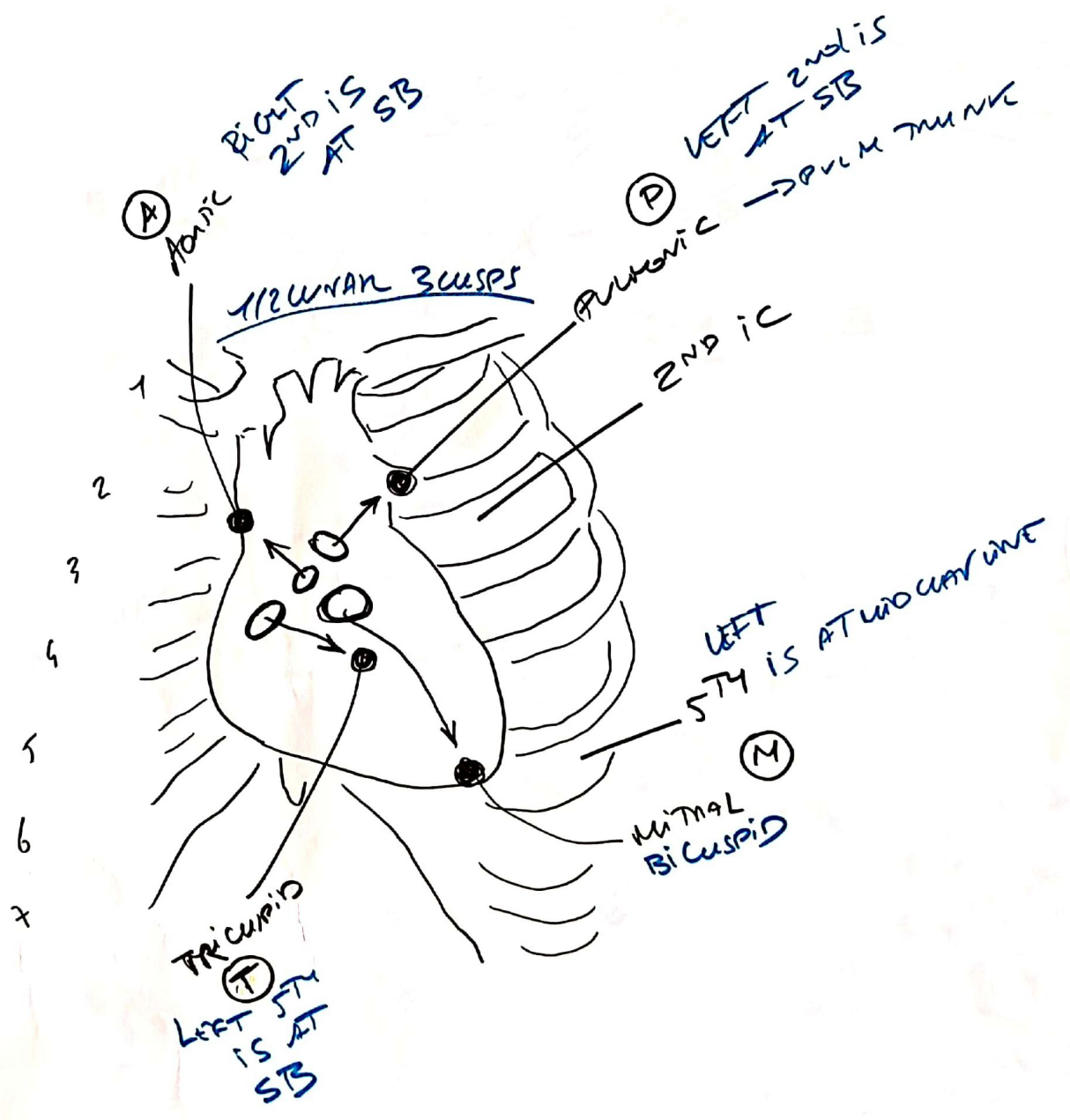
PA WEDGE
ARTERY
CATHETER

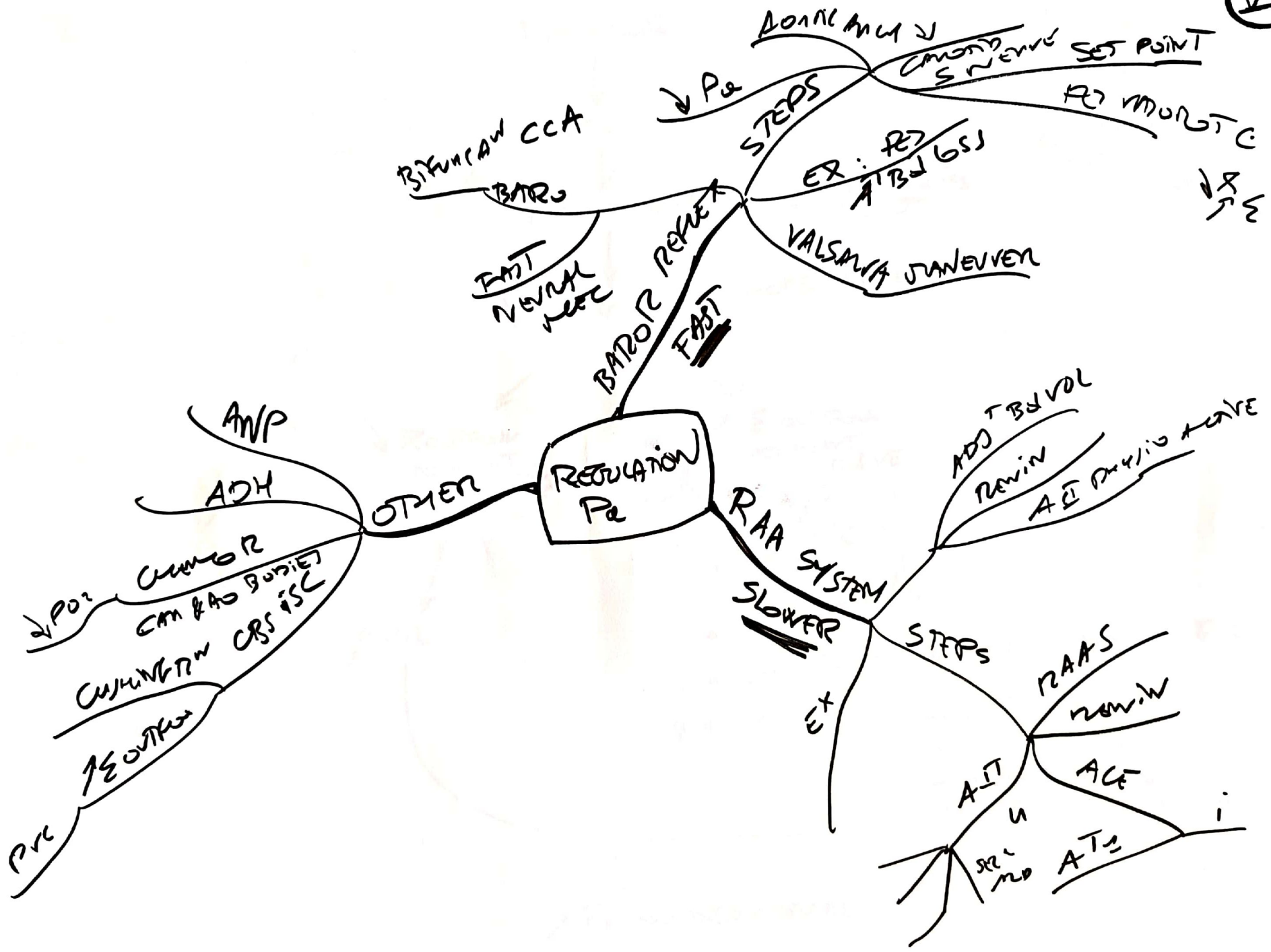


RA

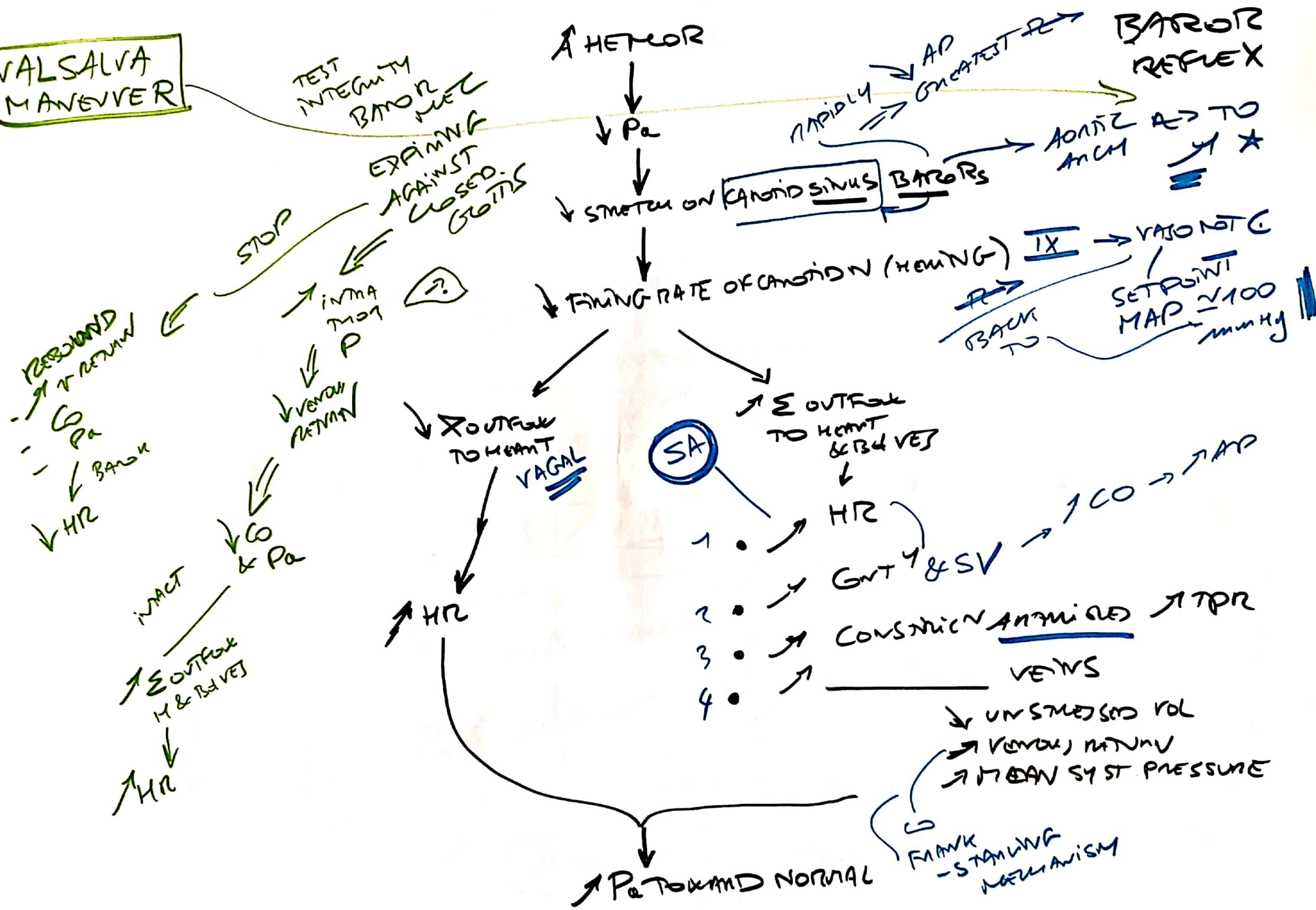
RV





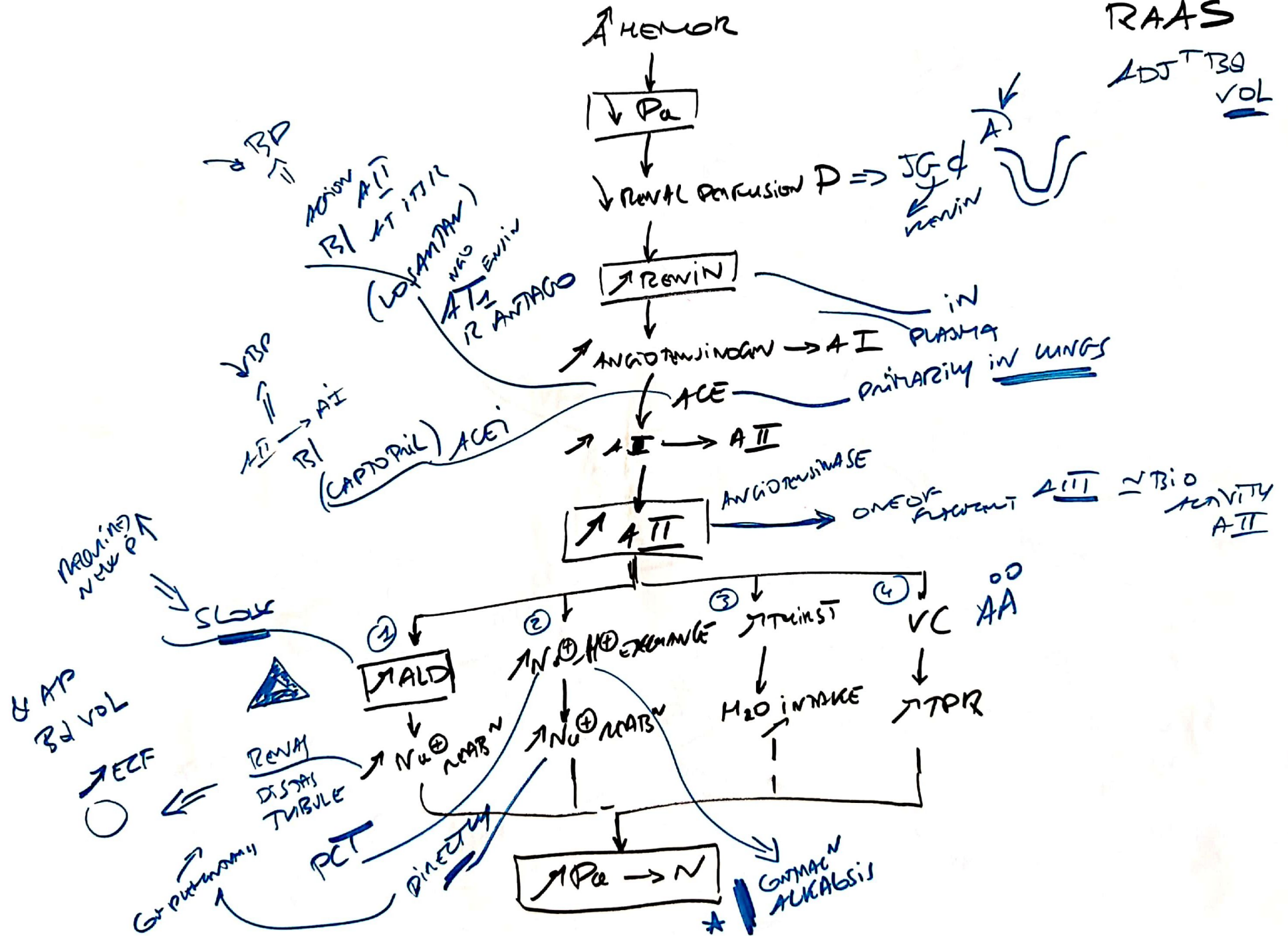


VALSALVA MANEUVER

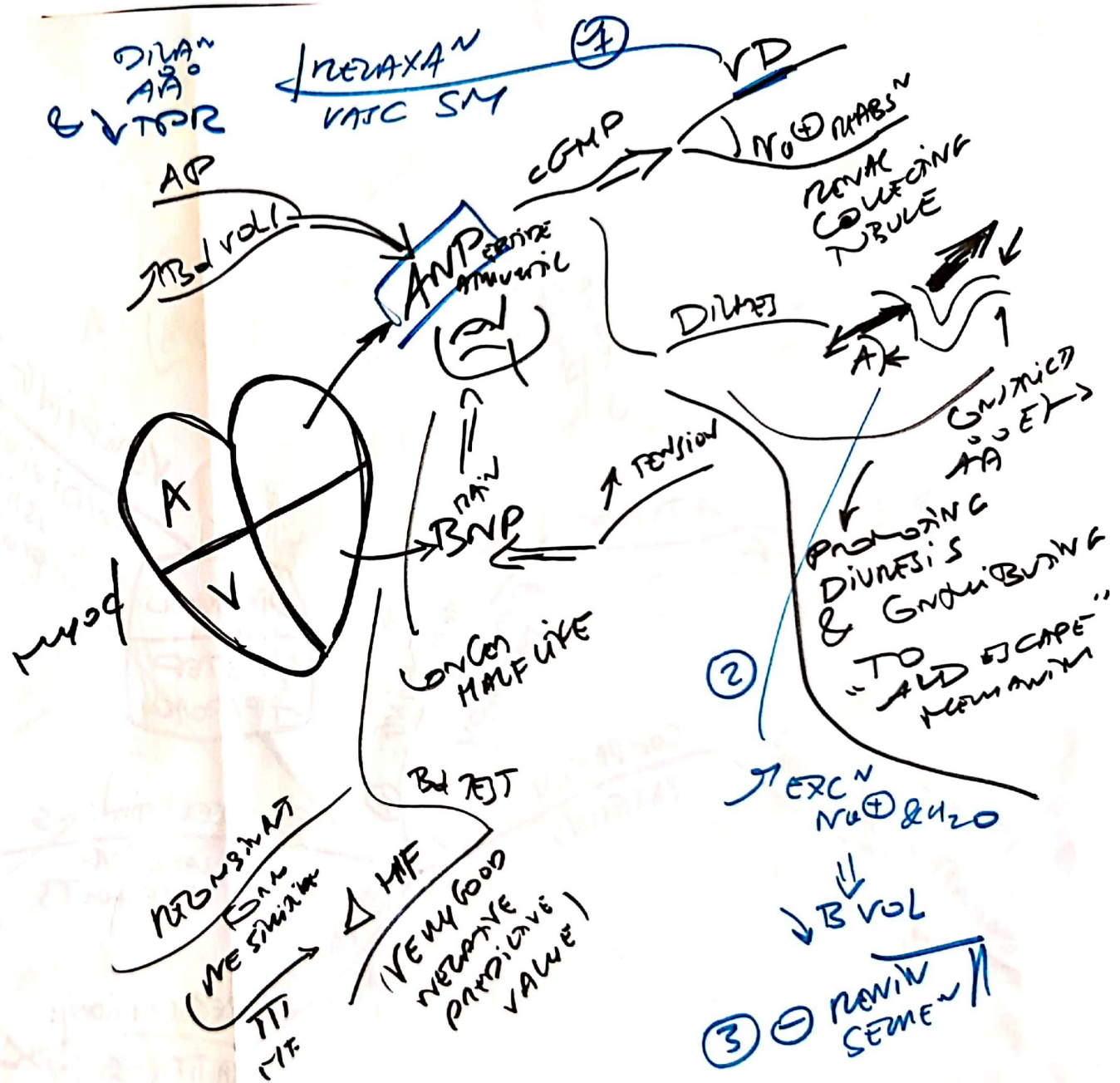


RAAS

ADJ ↑ TBQ
VOL







- AT VAP → ↓ STRETCH → ↓ AX BR FINE
 → ↑ E → E FINE &
 ↓ E → X STIMULAN → VC
 ↑ HR ↑ CONTRACTILITY ↑ BP
 IMPAIR → SEVERE MEMO

- CAROTID MASSAGE
 → ↑ P ON CAR SINUS → ↑ STRETCH
 → ↓ AX BACK FINE
 → ↑ AV REFRACTORY PERIOD
 → ↓ HR

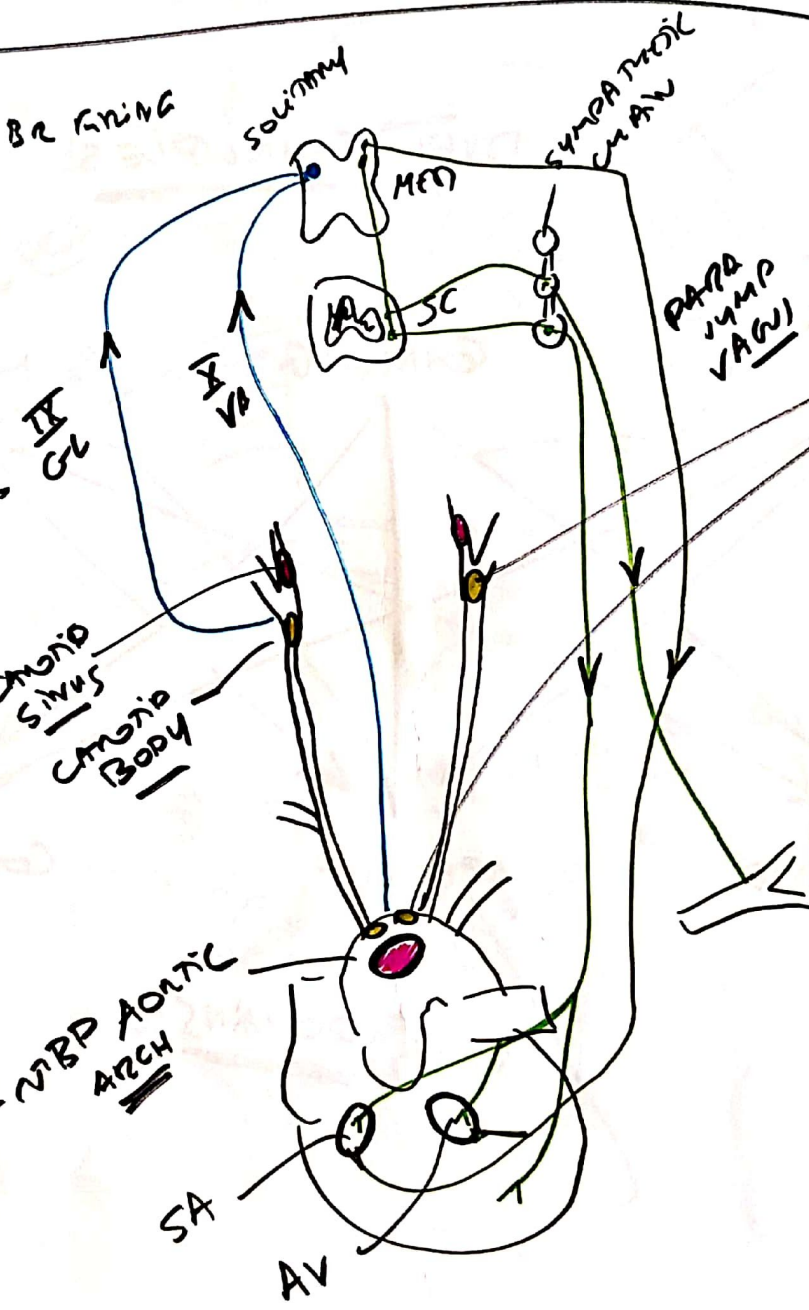
- GRADIENT
 1. ~~BRADIC~~ HT
 2. BRADIC
 3. ~~ADP~~ DRENED
 - ↑ INTNA CAVITIC
 CNJCTR AA P

→ CBR ISC → ↑ PCO₂
 & ↓ pH → CNR STRE →
 PROMOTION P HT
 → ↑ STRETCH →
 P RHE 3 MEMO
 INSULIN
 B1 ADIC

DILATES
 REGION
 AT
 CAROTID
 BIFURCATION

CAROTID
 SINUS
 CAROTID
 BODY

• → ↓ NBP AORTIC
 ARCH

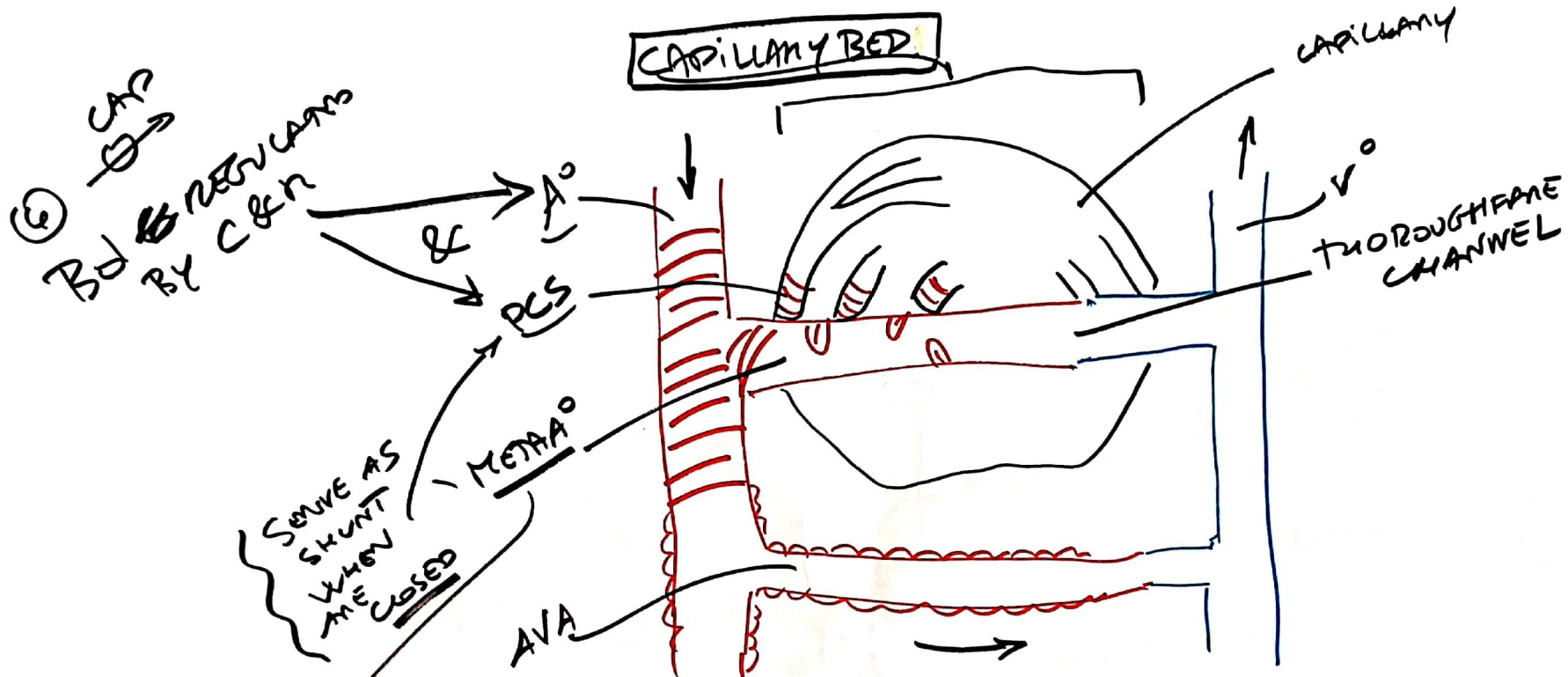


~~ANNA~~
~~ANIP~~
~~ISIP~~
~~NET~~

BAROZ &
 MEMO

↓
 CAROTID & AORTIC BODIES
 ↑ SAM
 → PLOZ
 ↓ MK B3 (< 60 mm Hg)
 & ↓ POZ

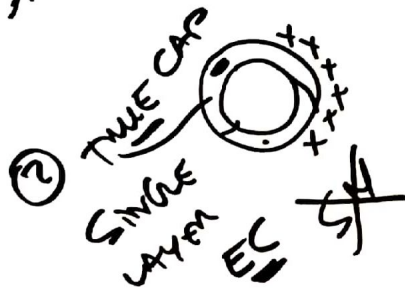
C. VAMH & O₂ BRAIN
 INTERSTITIAL FLUID
 ↑ ACOZ
 AS H⁺ ↓
 BBB
 DIRECTLY AS TO POZ
 LESS RES IF WITH
 → ↑ PLOZ (GPD)
 → ↑ DEMANDS
 ON
 TO GET ↓ O₂
 TO DRIVE
 REPO



⑥ CAP
BD BY C&H

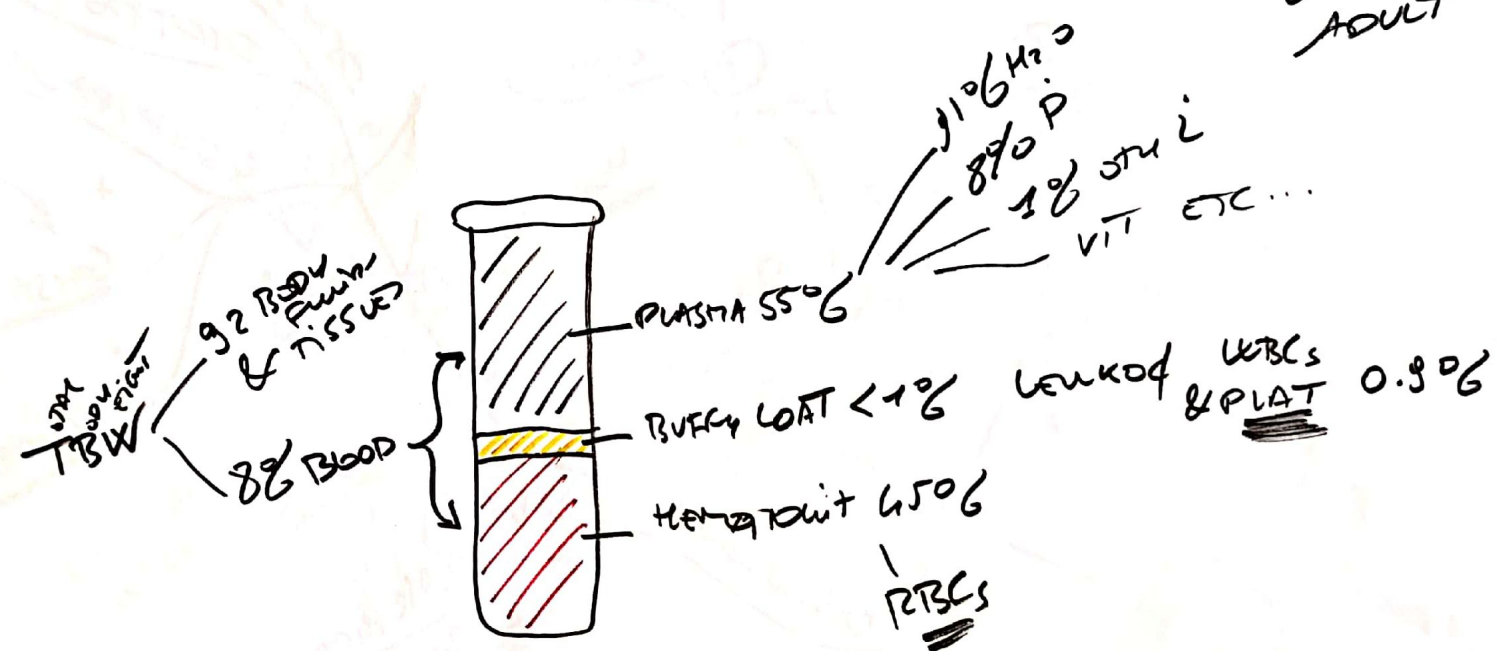
SERVE AS SHUNT WHEN THEY ARE CLOSED

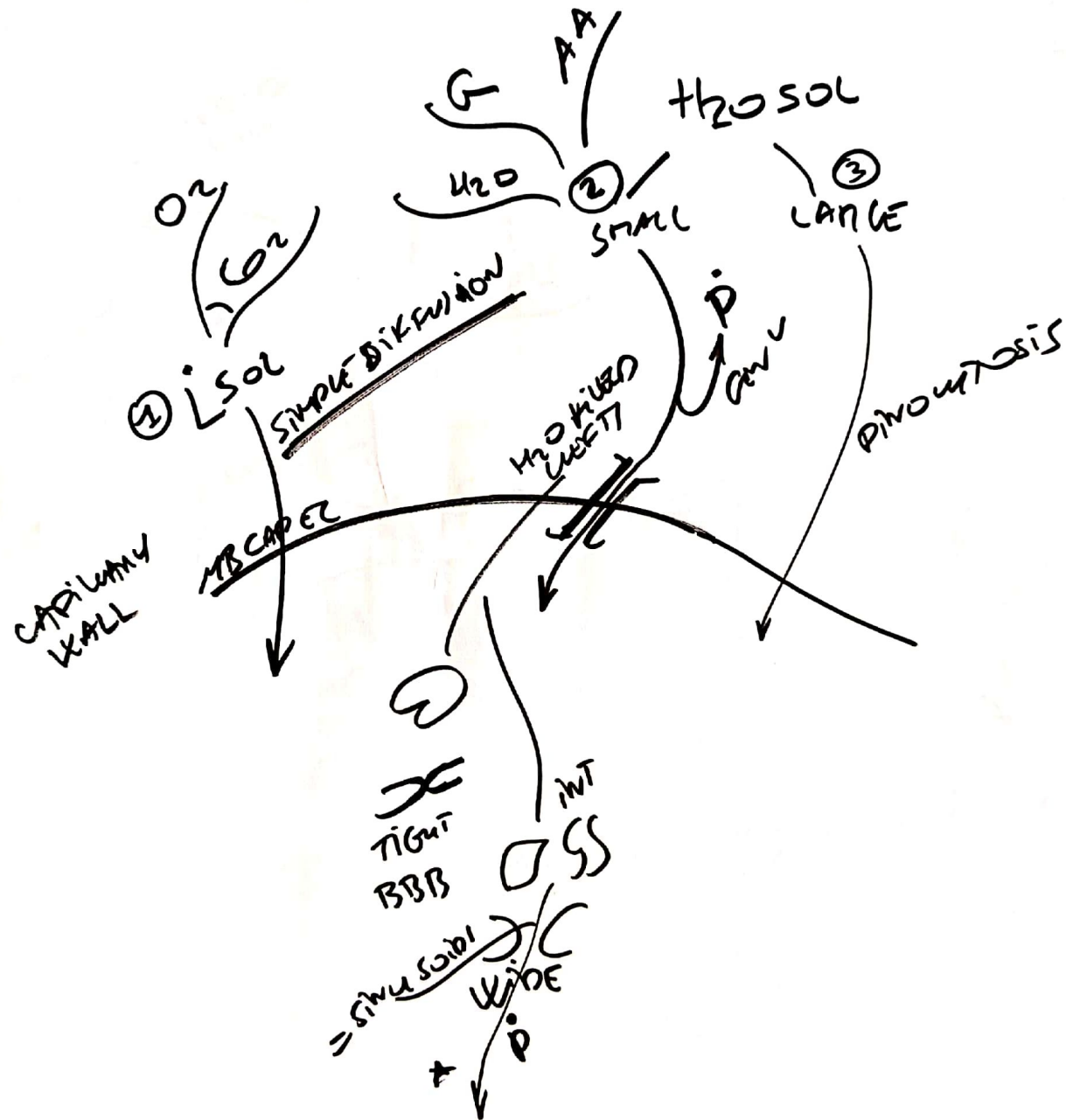
⑦ Branch into 2
as tunica & OK CAP
sheath = PCS

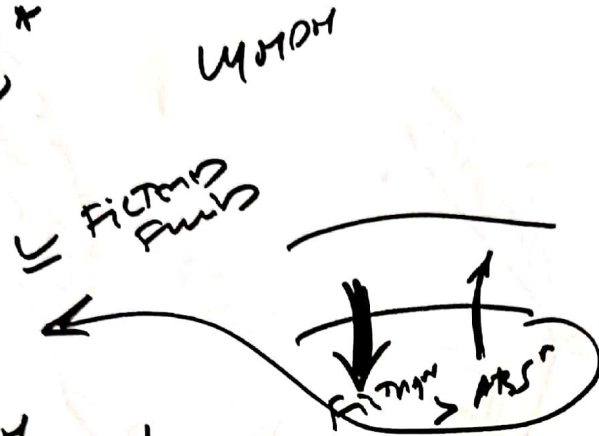


③ * VERY SMALL FENESTATION AREA $< 0.1 \mu^2$
 * CURVED PINNACLES BETWEEN EC
 * ALLOW H_2O SOL SUBSTANCE

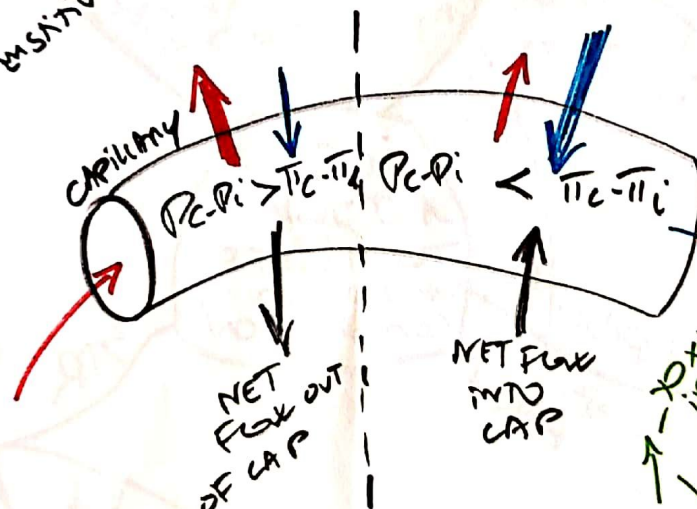
COMPOSIN
Bd
POST \odot
ANALYSE
ADULT







CAPILLARY FLUID EXCHANGE



HEART = FLUIDS OUTFLOW
 INTO INT. ORG. CAUSED BY
 Contraction negative pressures
 favor net absorption into cap
 FICTIV

NEARBY (FICTIV) PHENOMENON
 LYMPHATIC BLOCKAGE

$$J_v = \text{NET FLUID FLOW} = K_f \left[(P_c - P_i) - \sigma (\pi_c - \pi_i) \right]$$

CAP PERMEABILITY TO FLUIDS
 REFLECTS CAP PRESSURE \dot{p}

$$P_c = 30$$
$$\pi_c = 28$$

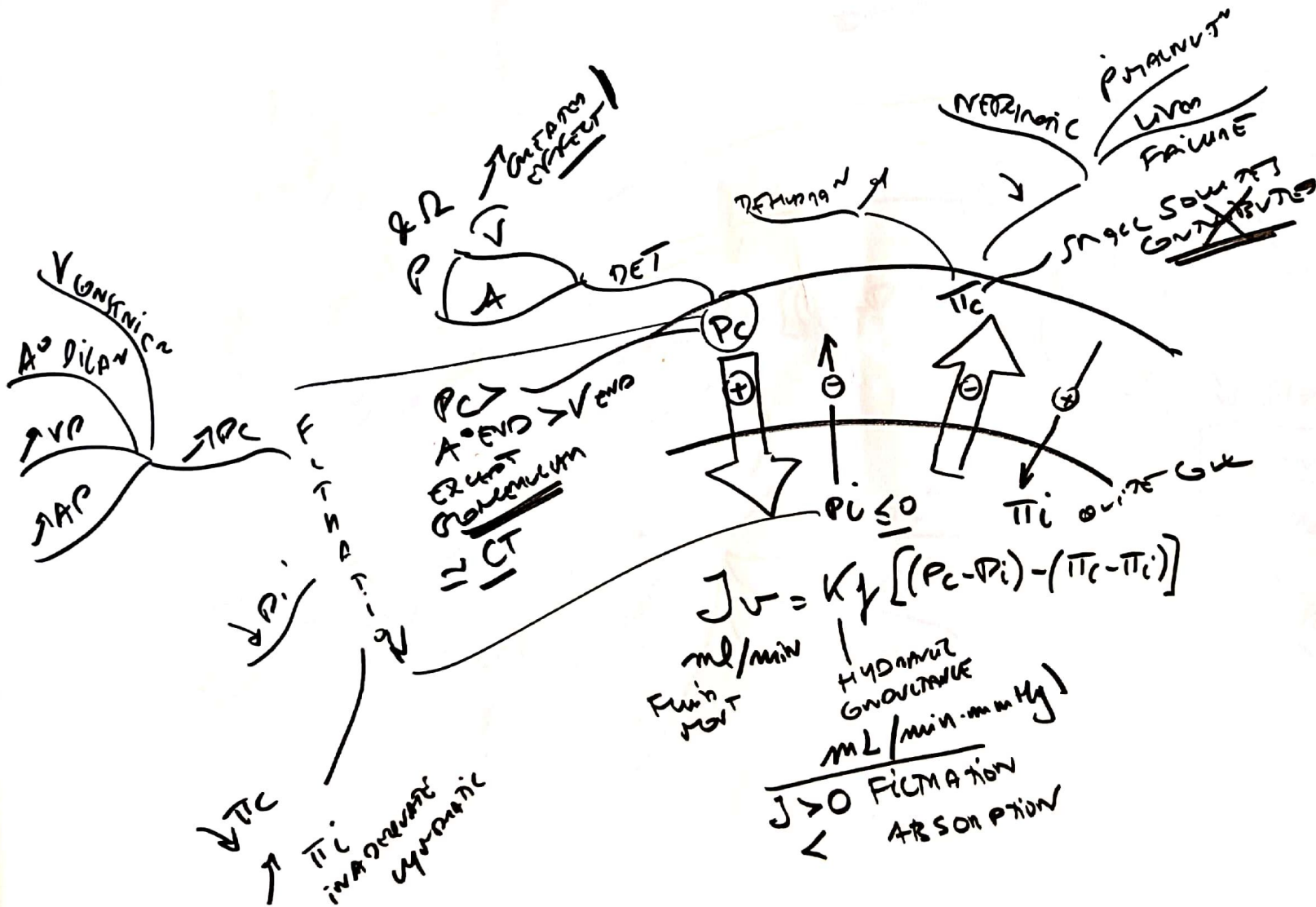
$$P_i = 0$$
$$\pi_i = 4$$

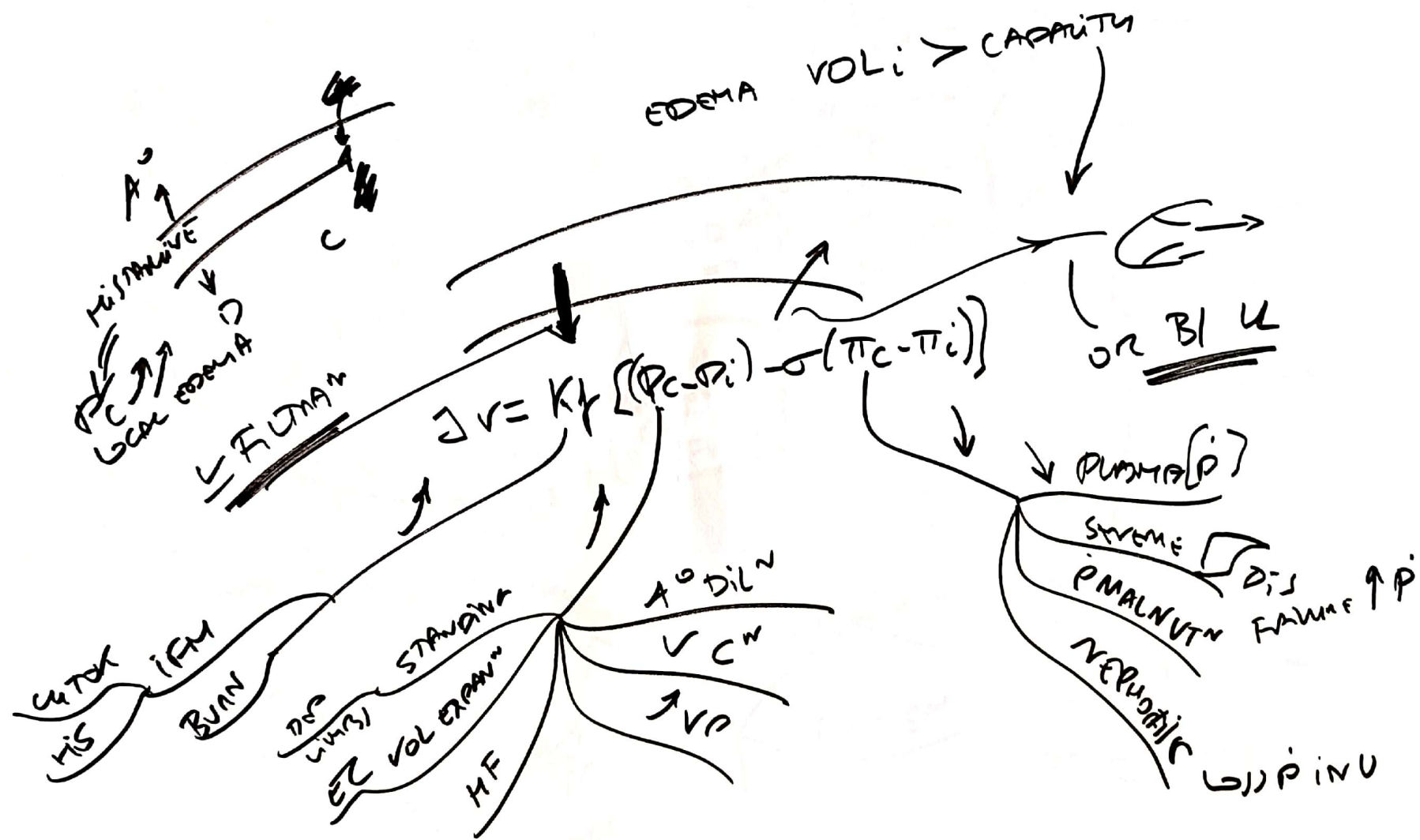
$$\text{NET PREZUME}$$
$$= (30 - 0) - (28 - 4)$$
$$= +6 \text{ FIZMAN}$$

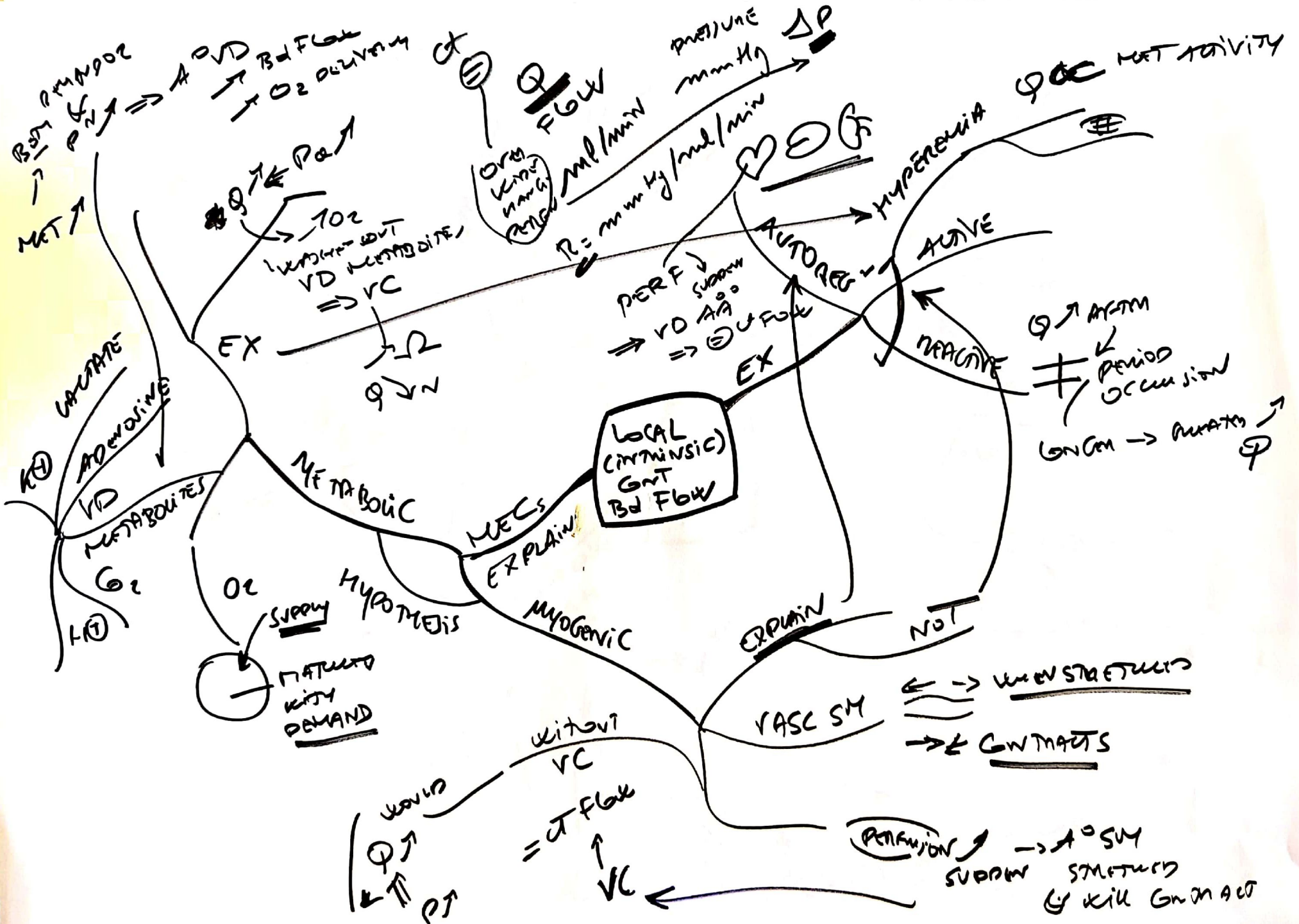
$$P_c \downarrow 16$$
$$\pi_c 28$$

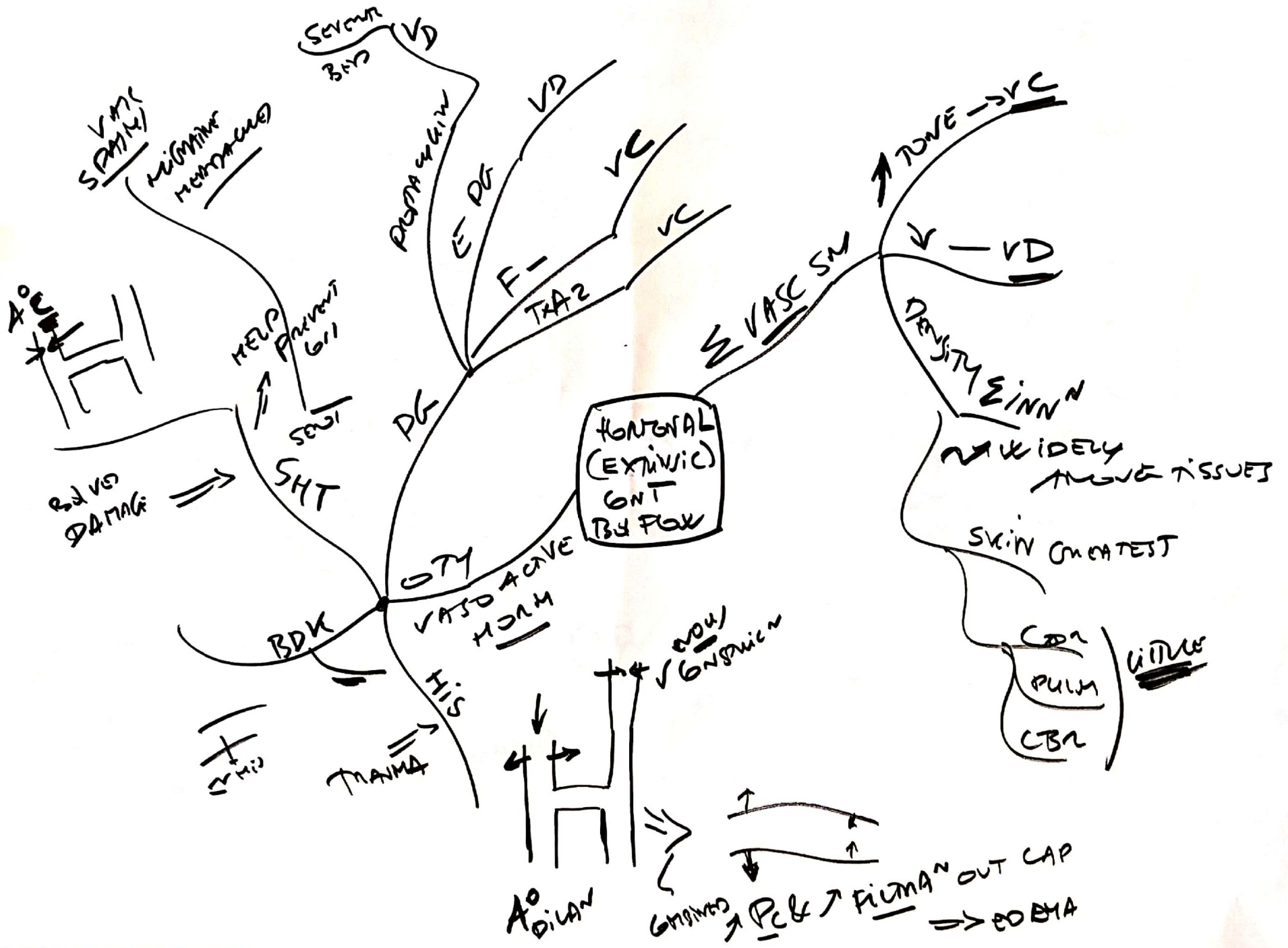
$$(16 - 0) - (28 - 4)$$
$$= -8 \text{ ABSN}$$

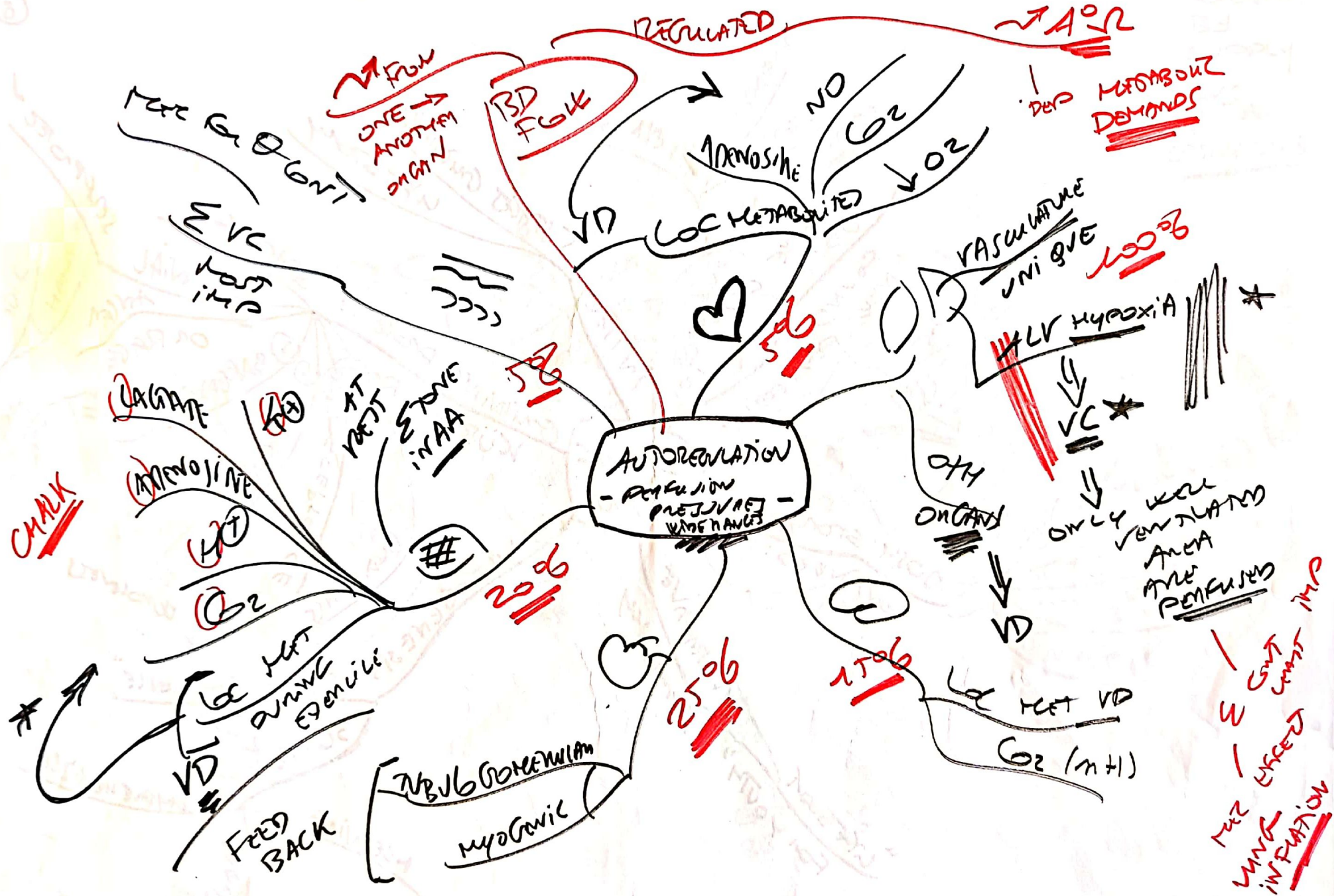
$$P_i = 0$$
$$\pi_i = 4$$











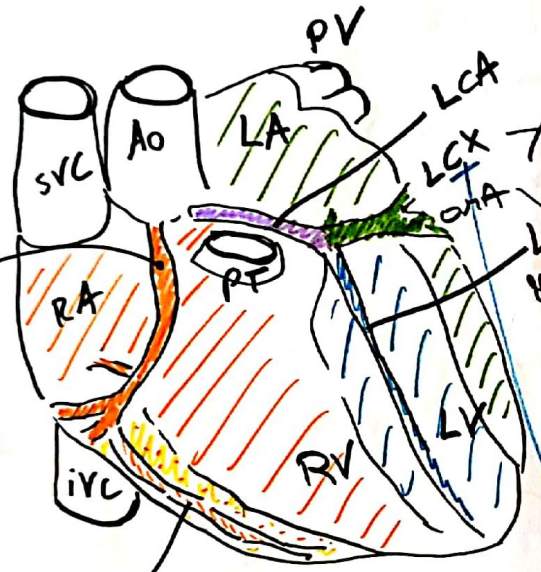
CORONARY
Bd
SUPPLY

• PDA'S
IN
EARLY DIAS

BRADIC
(MAY BE HEART B) → MAY INFRNT

SA INTRD OF DOWN

RV (R main) (ANA)



α VIEW

α 1/3 IVS α 2/3 PPM
α SEE LV ME OCCURRED

LEFT 80%

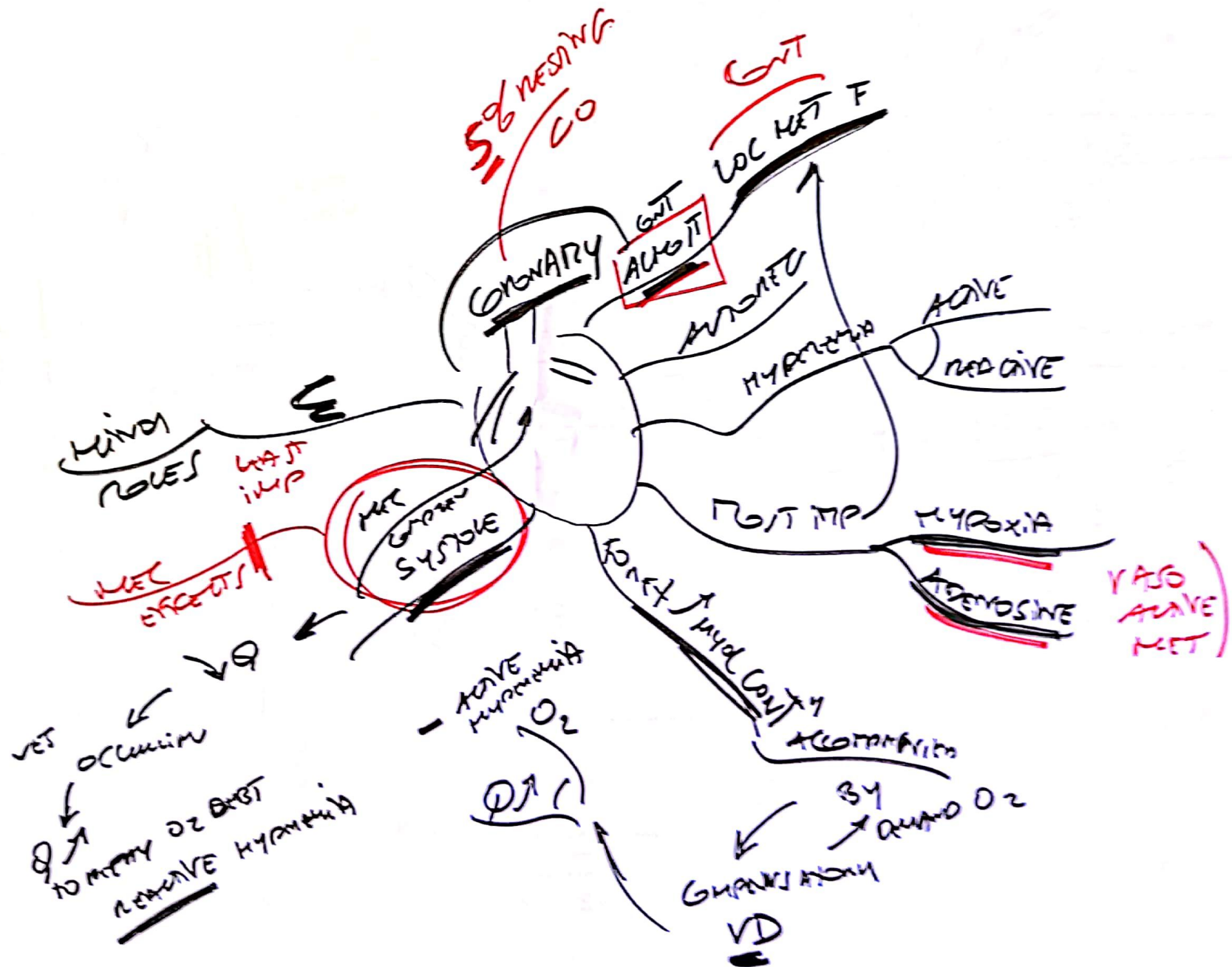
RDOM 85%

CORDM BOTH 7%



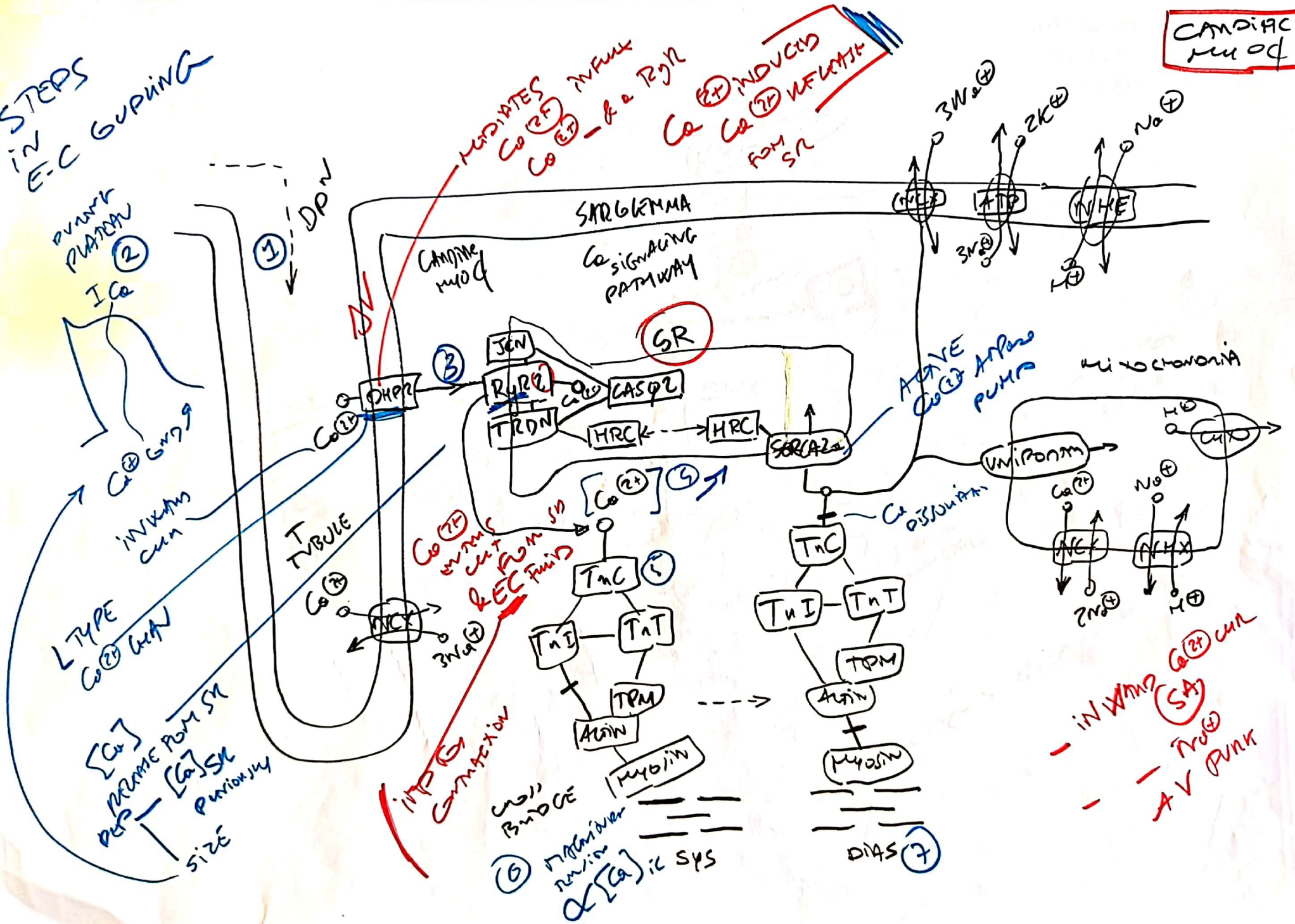
π VIEW

PDA (DEP ON DOMINANT)
π 1/3 IVS
π 2/3 VENT
π PPM

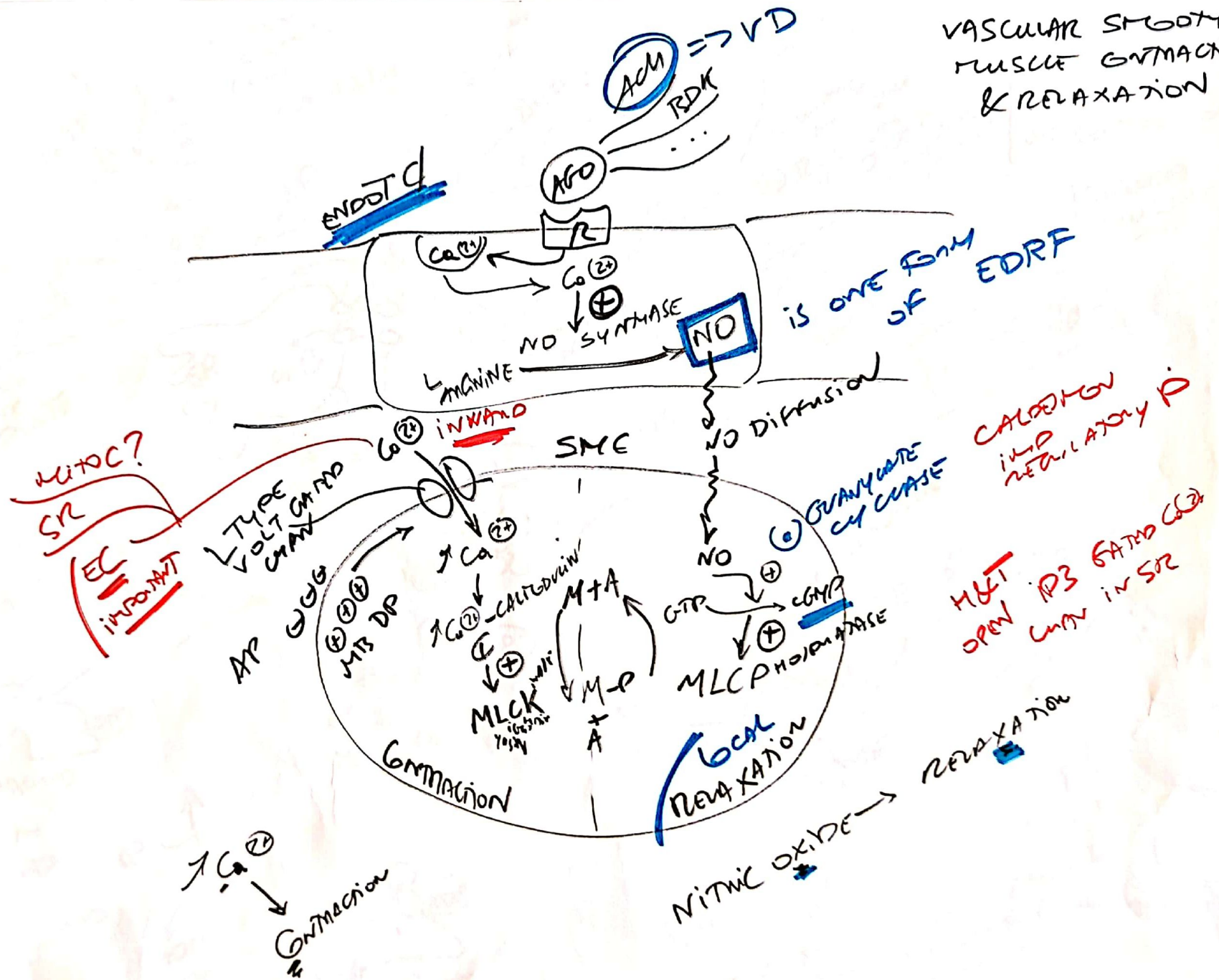


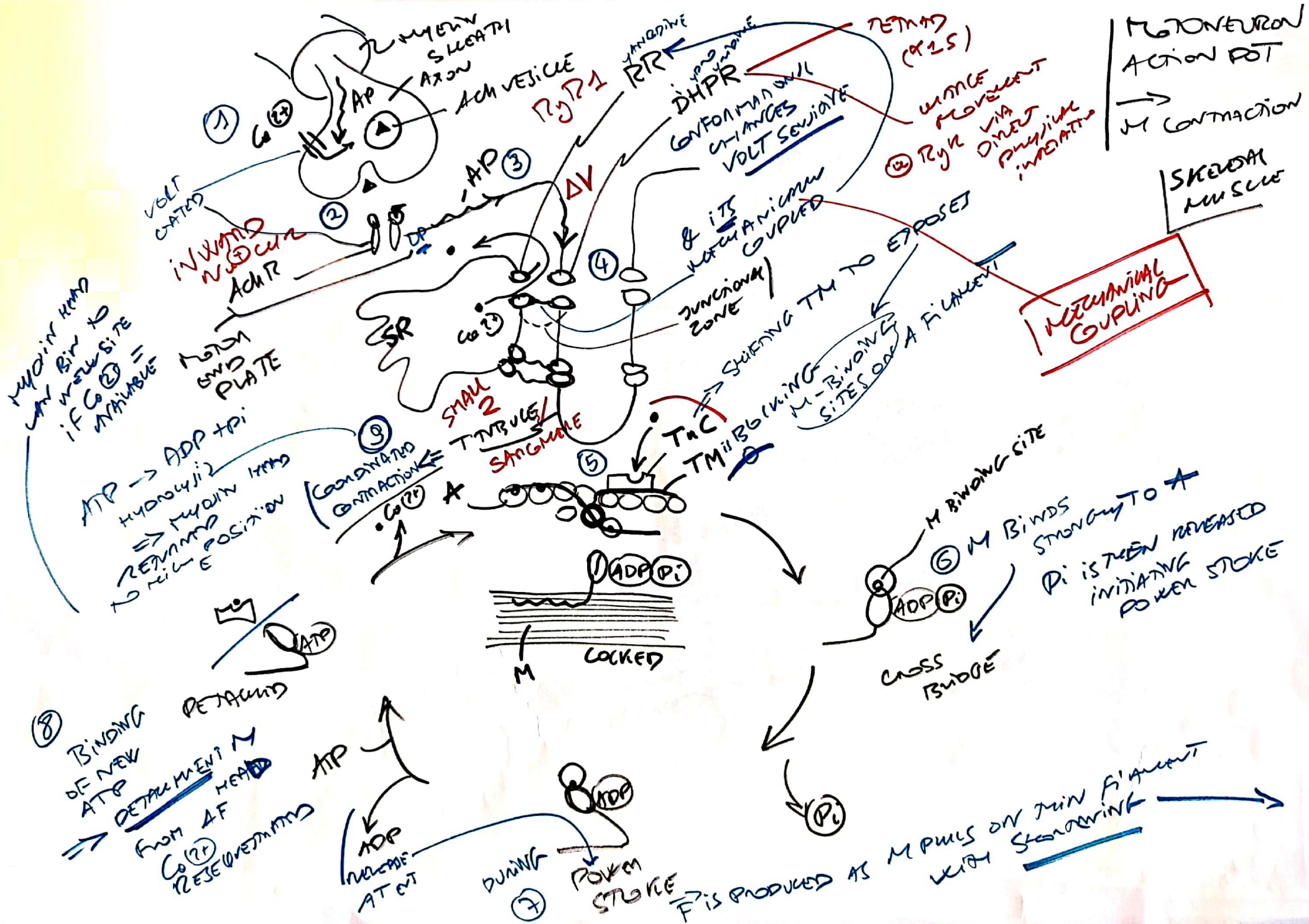
STEPS IN E-C COUPLING

CAMP/AC MOD



VASCULAR SMOOTH MUSCLE CONTRACTION & RELAXATION





MYOIN HEAD CAN BIND TO NEW SITE IF Ca²⁺ AVAILABLE

Ca²⁺ INWARD CURRENT AChR

ATP → ADP + P_i HYDROLYSIS ⇒ MYOIN HEAD REMAINS IN NEW POSITION



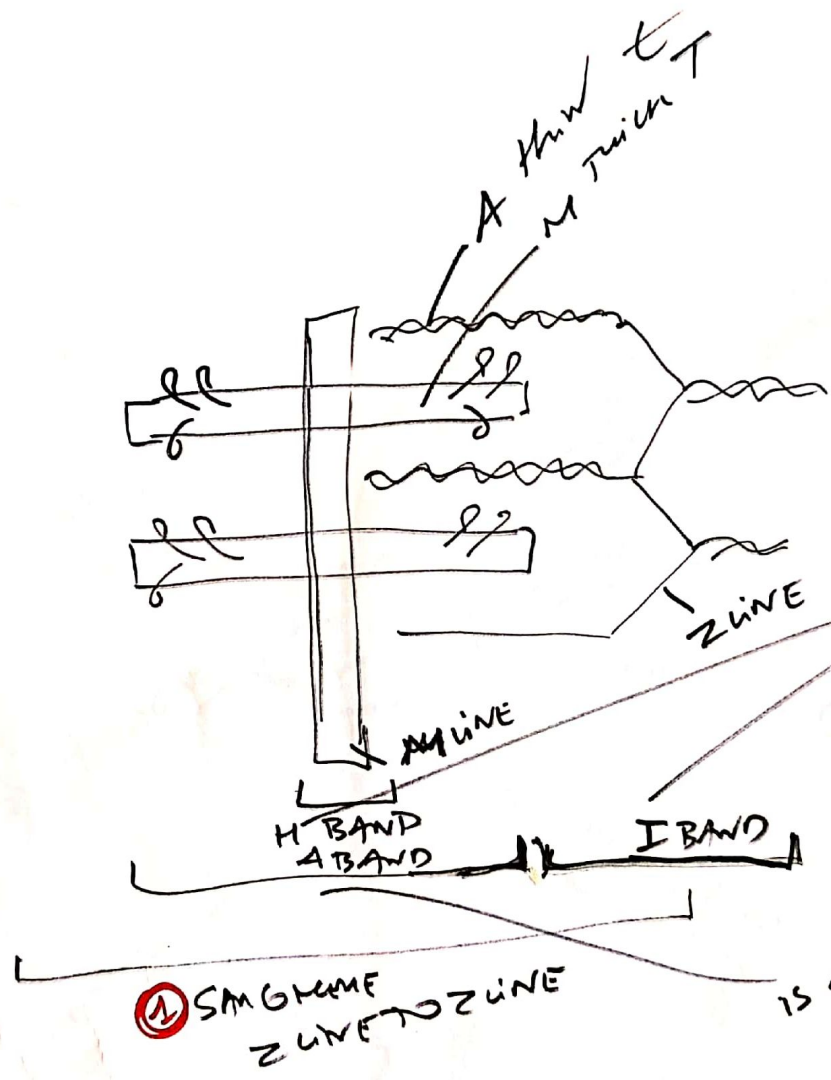
⑧ BINDING OF NEW ATP ⇒ DETACHMENT M FROM AF FROM AF RESEQUESTERS ATP

ADP + P_i RELEASING ATP

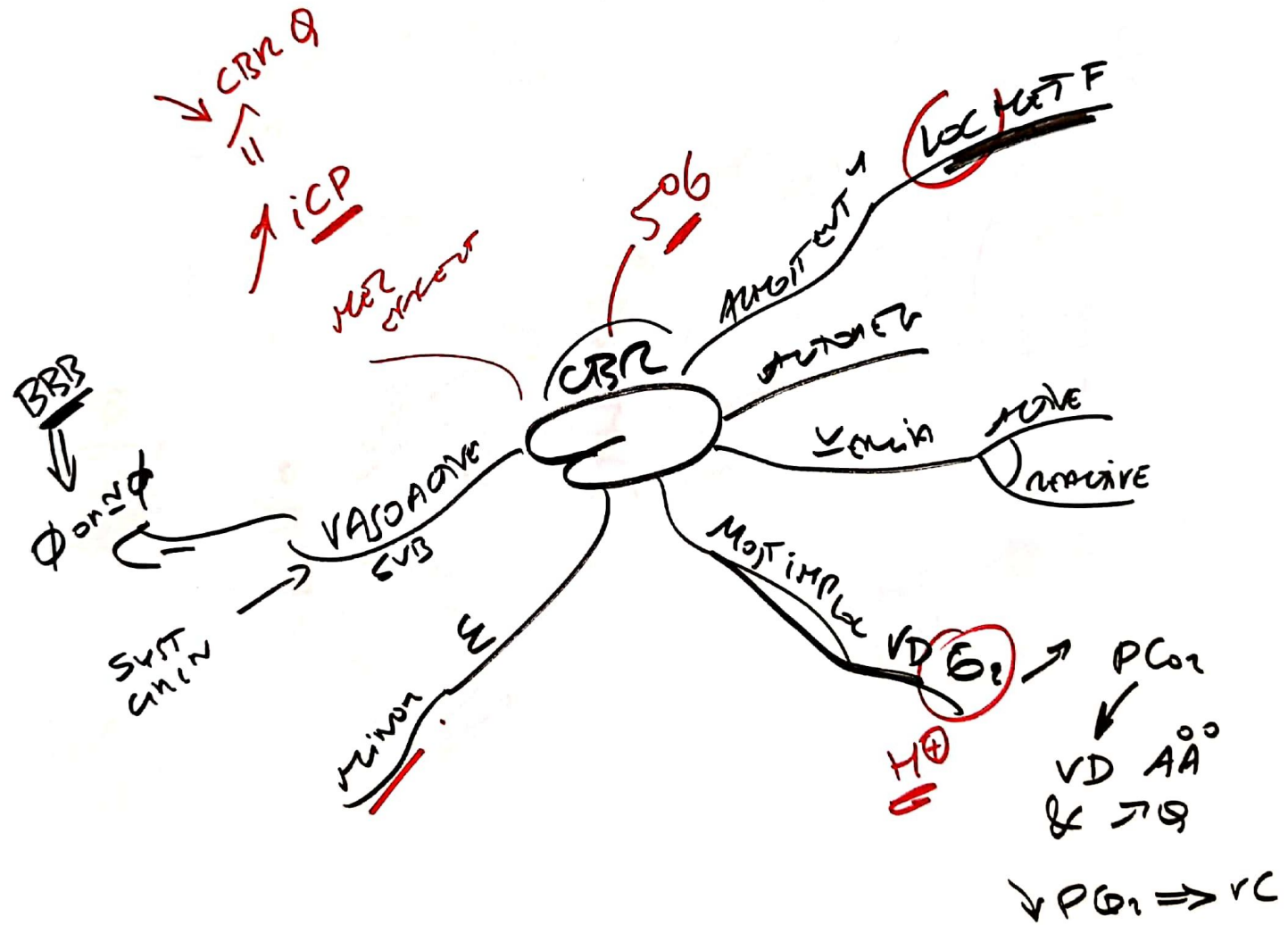
DURING POWER STROKE P_i IS PRODUCED AS M PULLS ON THIN FILAMENT WITH STANDING

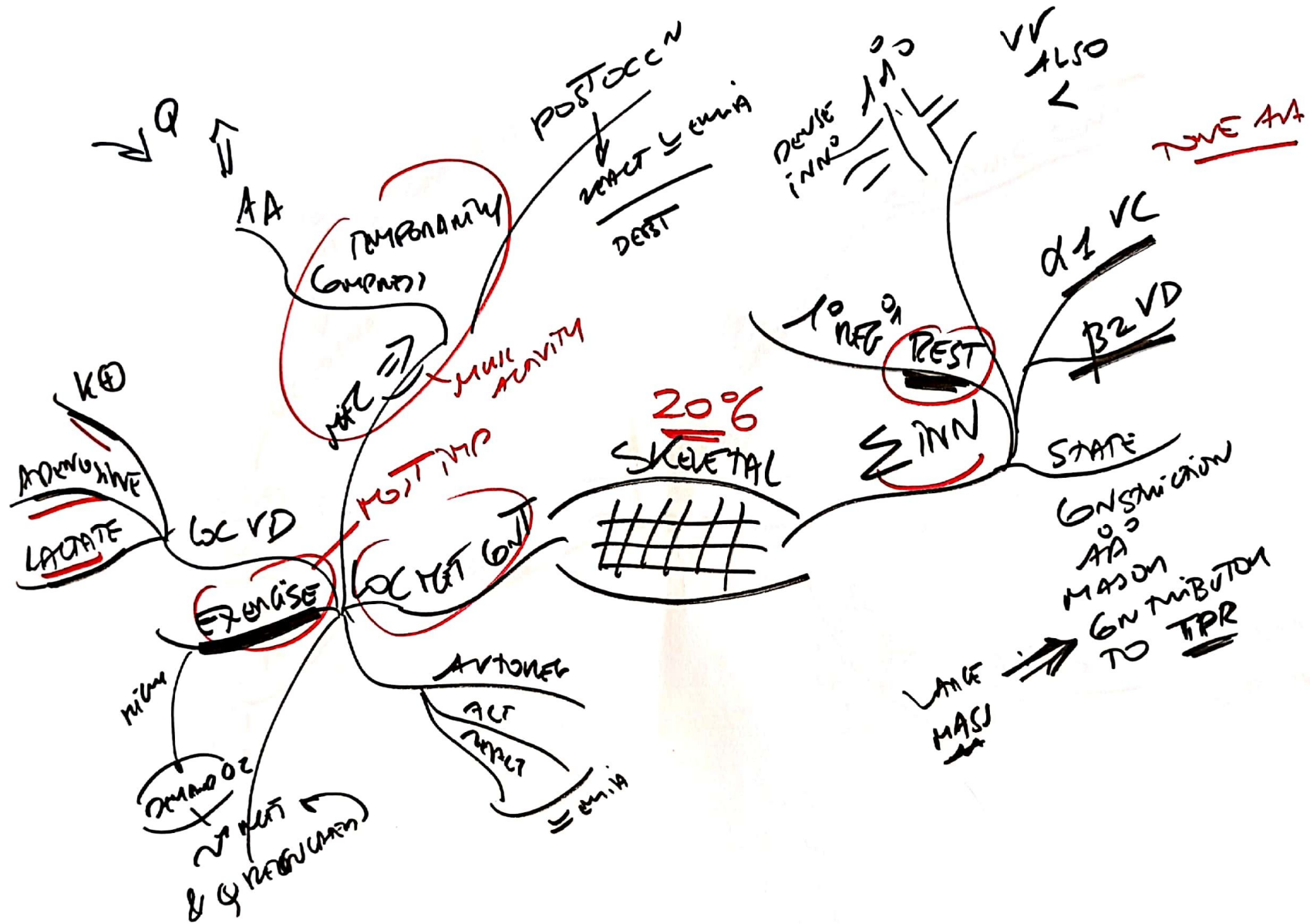
P_i IS PRODUCED AS M PULLS ON THIN FILAMENT WITH STANDING

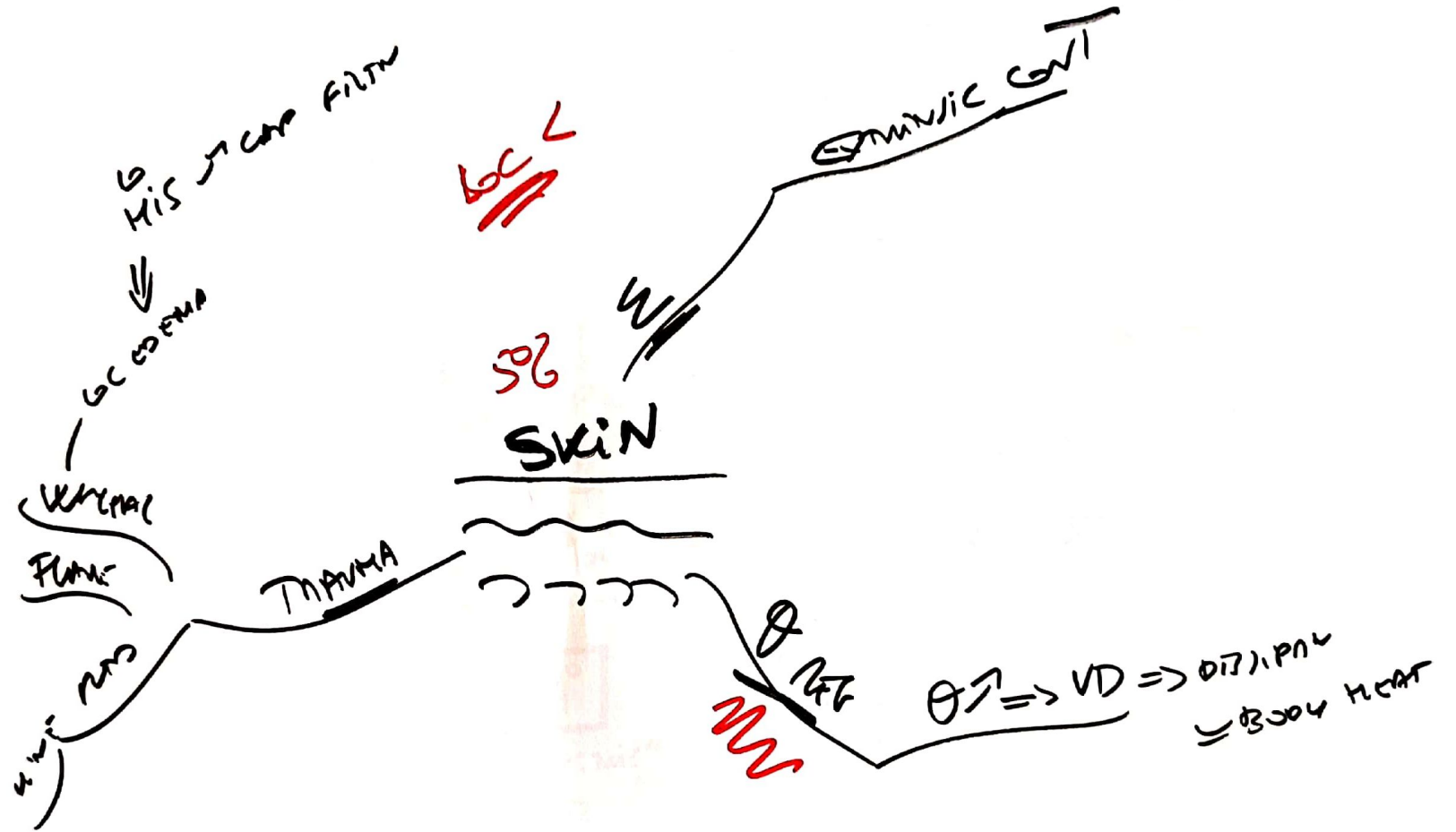
SKELETAL
MUSCLE
CARDIAC

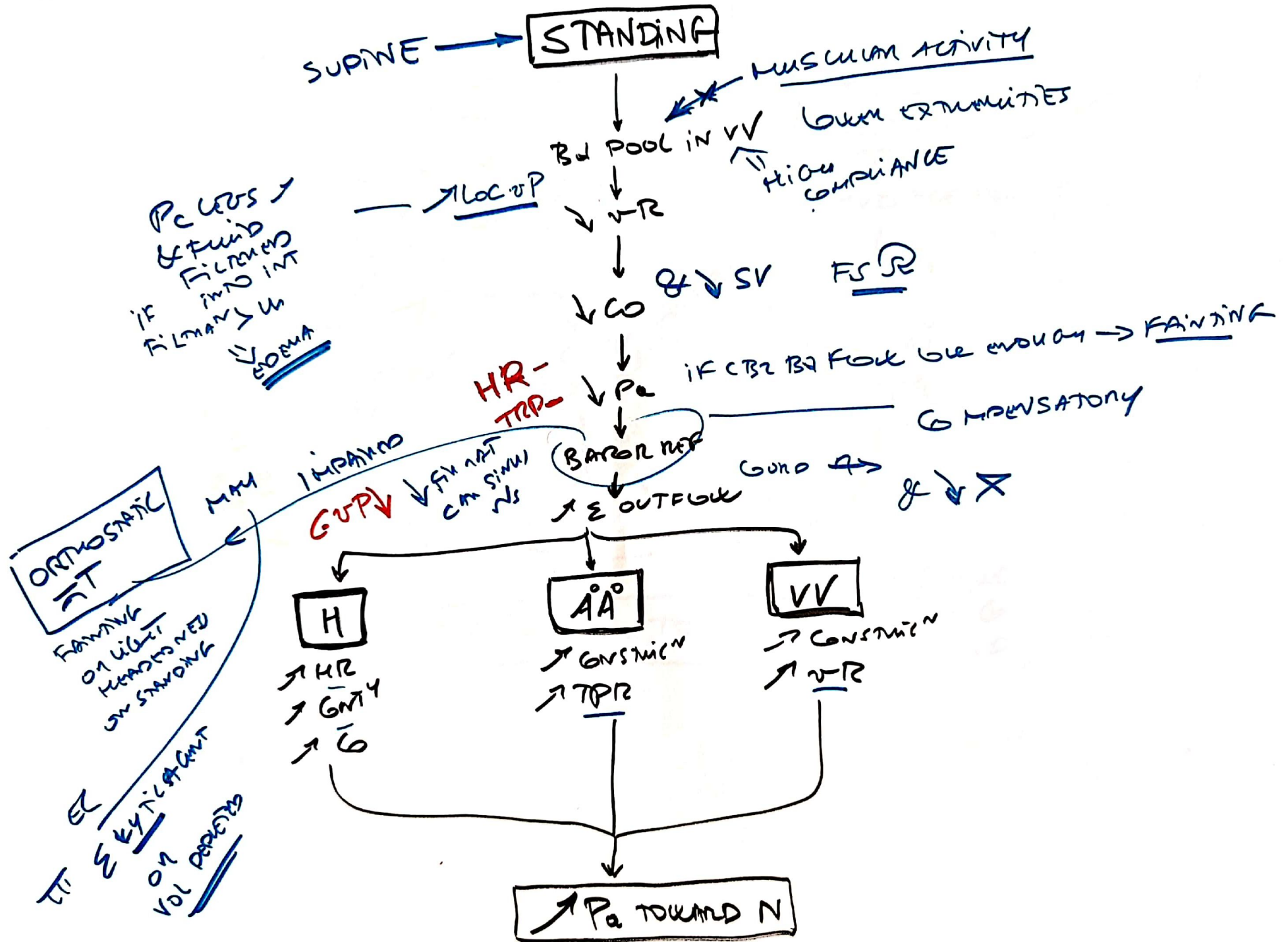


SHORTENING
OF H & I
BANDS
& BETWEEN
Z LINES
H/2 SHORTENAGE









EXERCISE

C COMMAND

LOC PED

↑ E OUTPUT H & RV
↓ X

↑ VD METABOLITES

↑ MET ACTIVITY

↑ MM
↑ CY SV

C A₀
↑ SPANJUMIC & NEVAC
↑ P ↑ Q ↓

C VV
↑ VR

↑ MET ACTIVITY ✓

↓ SKR (BOD)

↑ LACTATE
↑ K₀
↑ ADRENERGIC
↑ O₂ = MINA

↓ TPR
OVERALL

↑ IN MOVEMENT
↑ O₂ = MINA

↑ PULSION CAP ↑
VIF DISTANCE O₂ ↓

↑ BA FLOW TO (#)

④ E MOVE BY C COMMAND WOULD → TPR

↑ RP → SLIGHT
↑ PP → ↑ SV

Δ V O₂ DIFFERENCE
↑↑ E ↑ O₂ CONSUMPTION

IN NOT OVER
FROM NET
IN MY
PROPHOCENTRY
IN MY
PROPHOCENTRY

↑ ANTICIPAN
↑ ANTICIPAN

↑ VENTILATION VOL
↑ NO MET
↑ SV
↑ K₀

