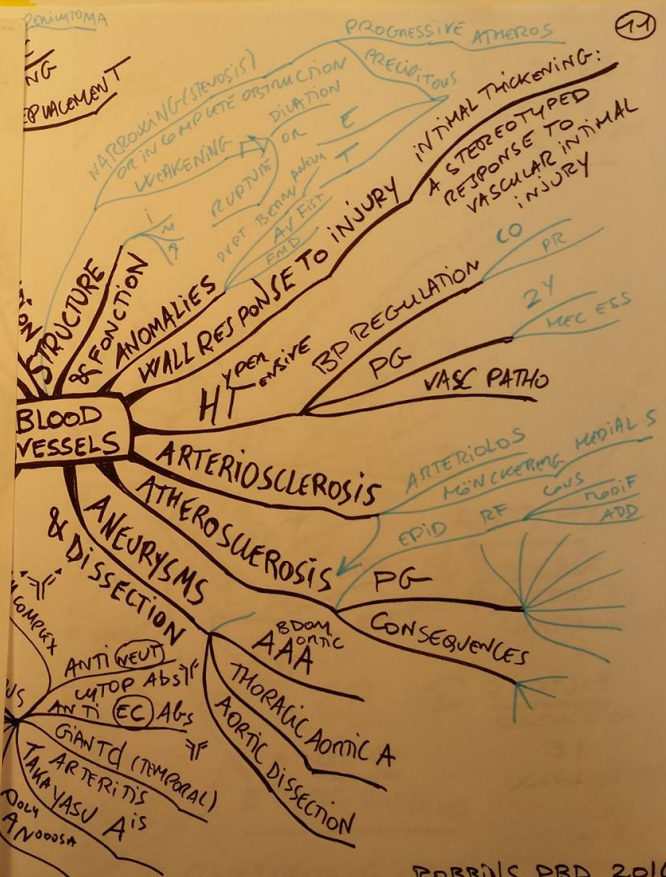
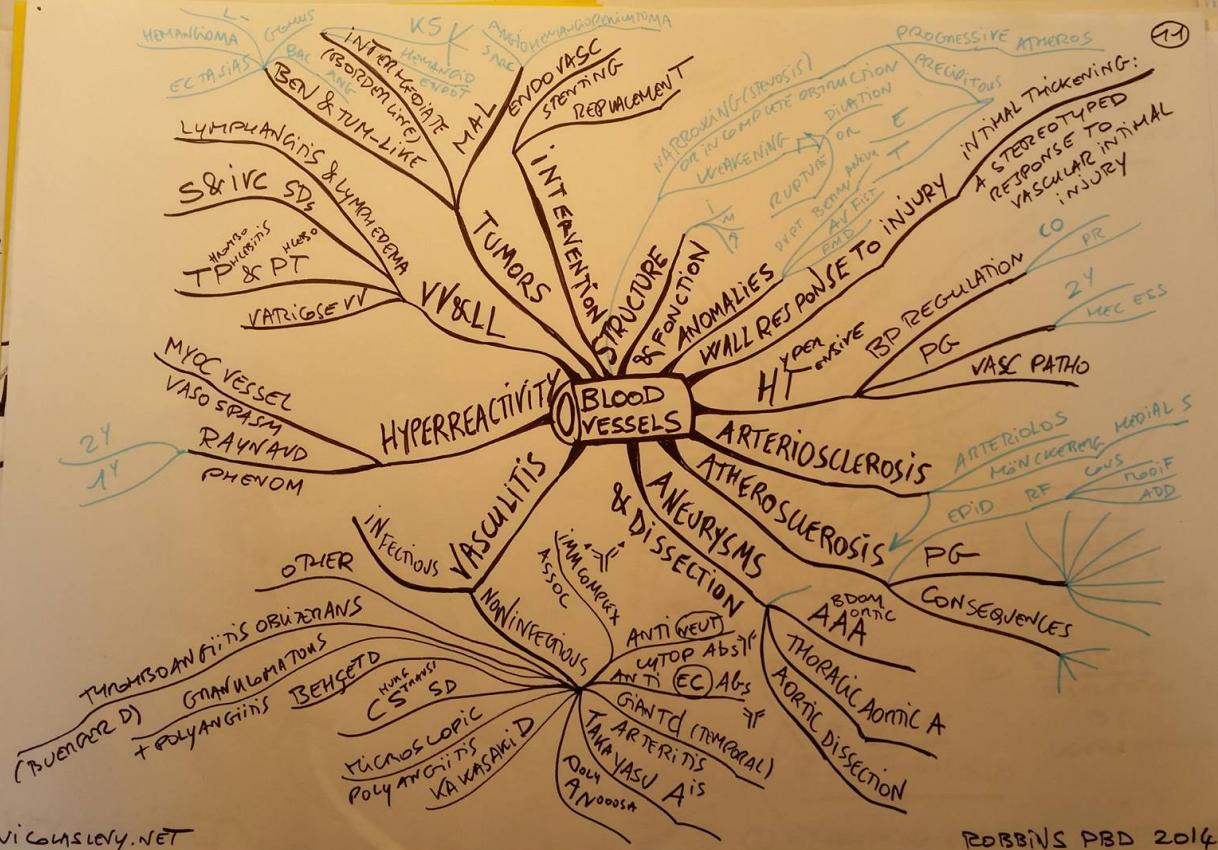


PHARMACOLOGY
NEURODEGENERATIVE DISORDERS



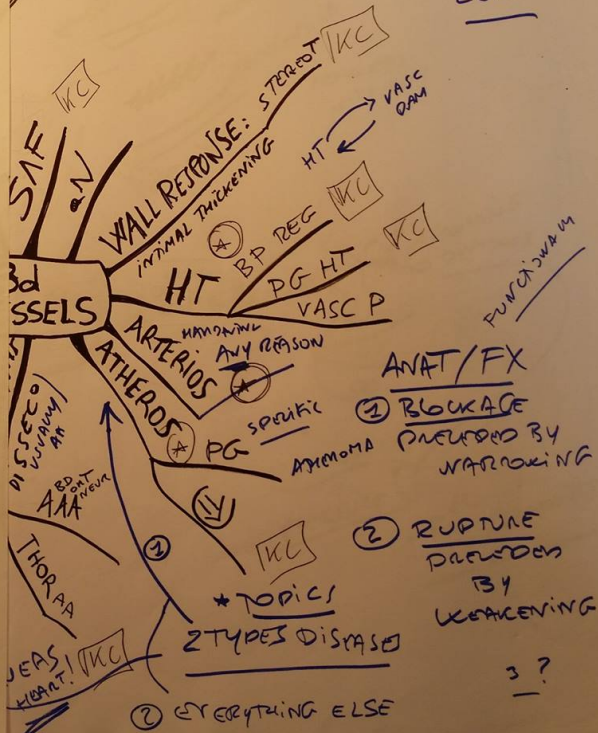
ROBBINS
BLOOD VESSELS

ROBBINS PBD 2014



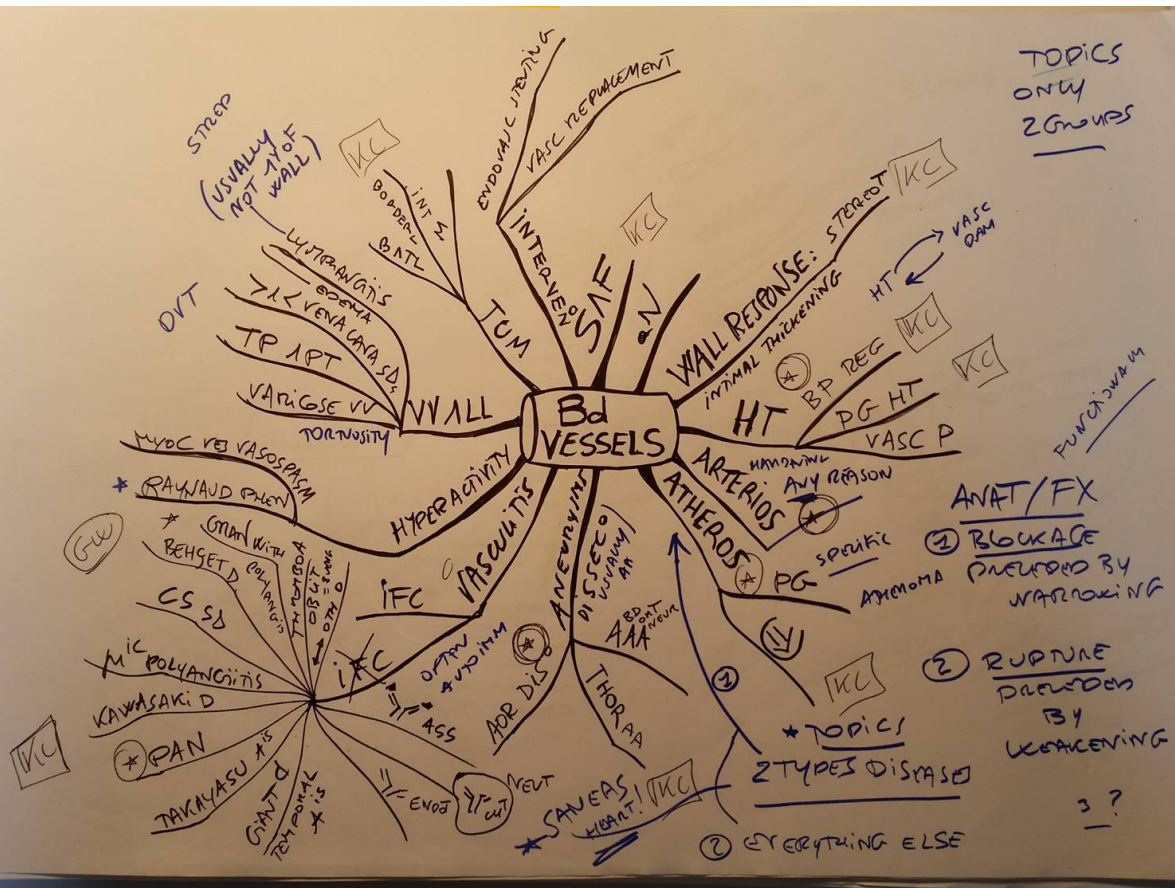
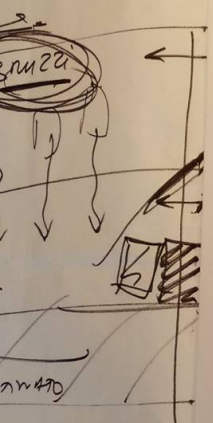
EMPHASIS

TOPICS
ONLY
2 GROUPS



KEY 6 N CAPS

Diagrams



TOPICS ONLY 2 GROUPS

FUNCTIONAL

ANAT/FX

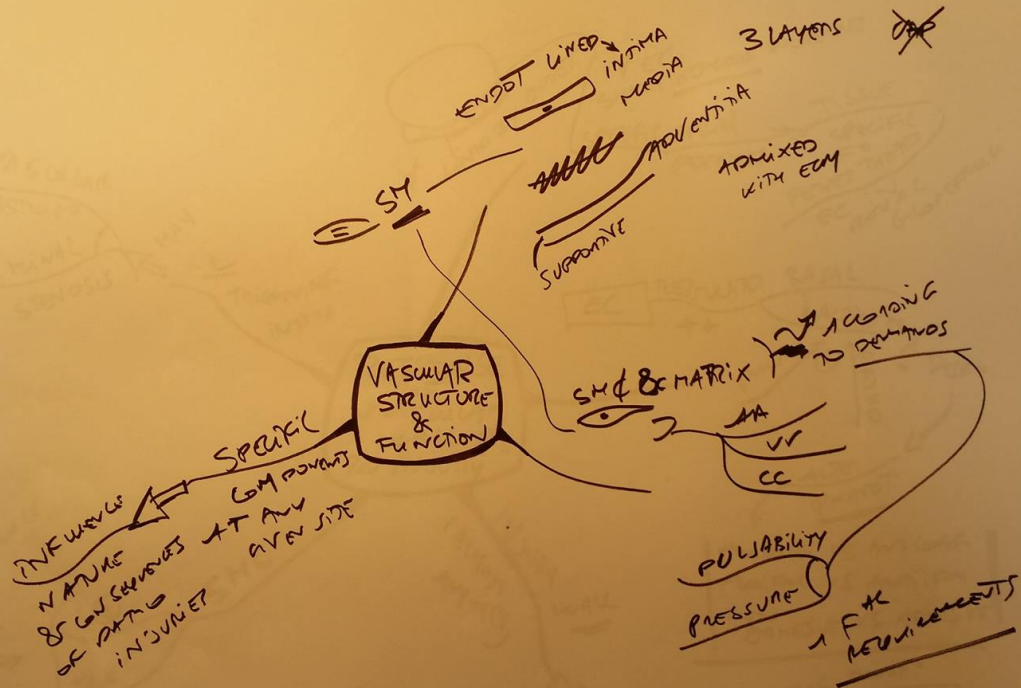
② BLOCKAGE PRELUDED BY NARROWING

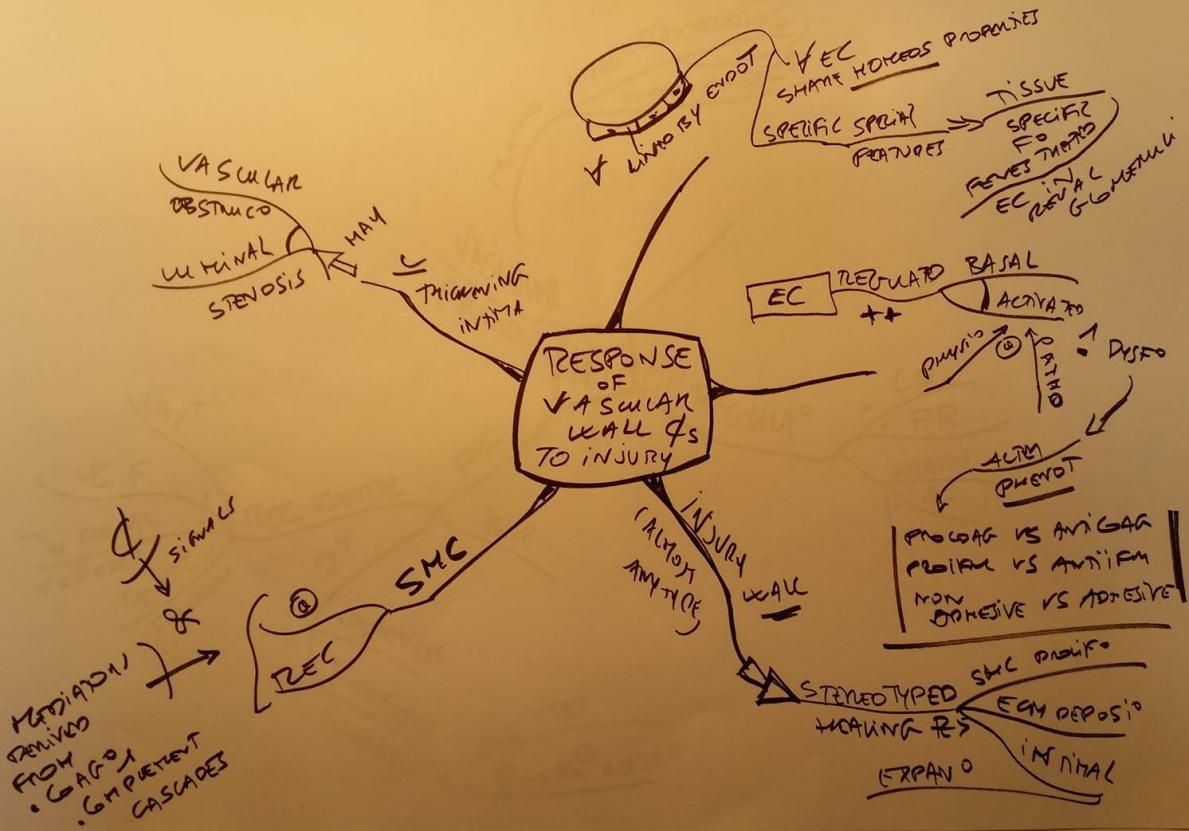
② RUPTURE PRELUDED BY WEAKENING

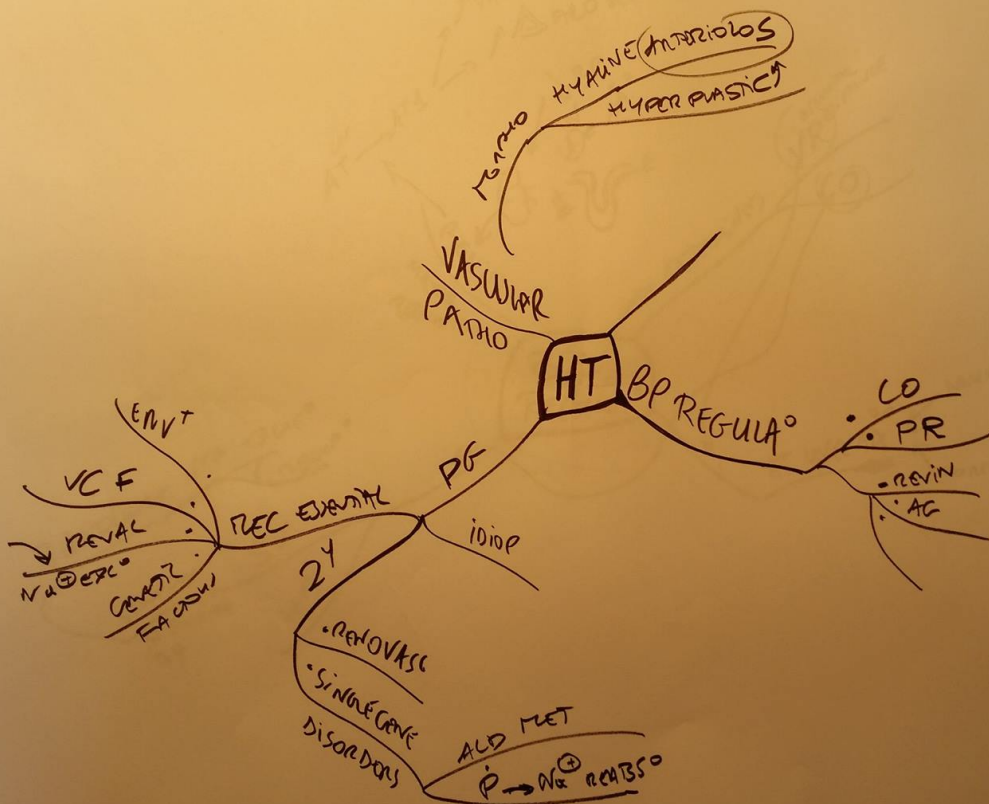
* TOPICS 2 TYPES DISEASE

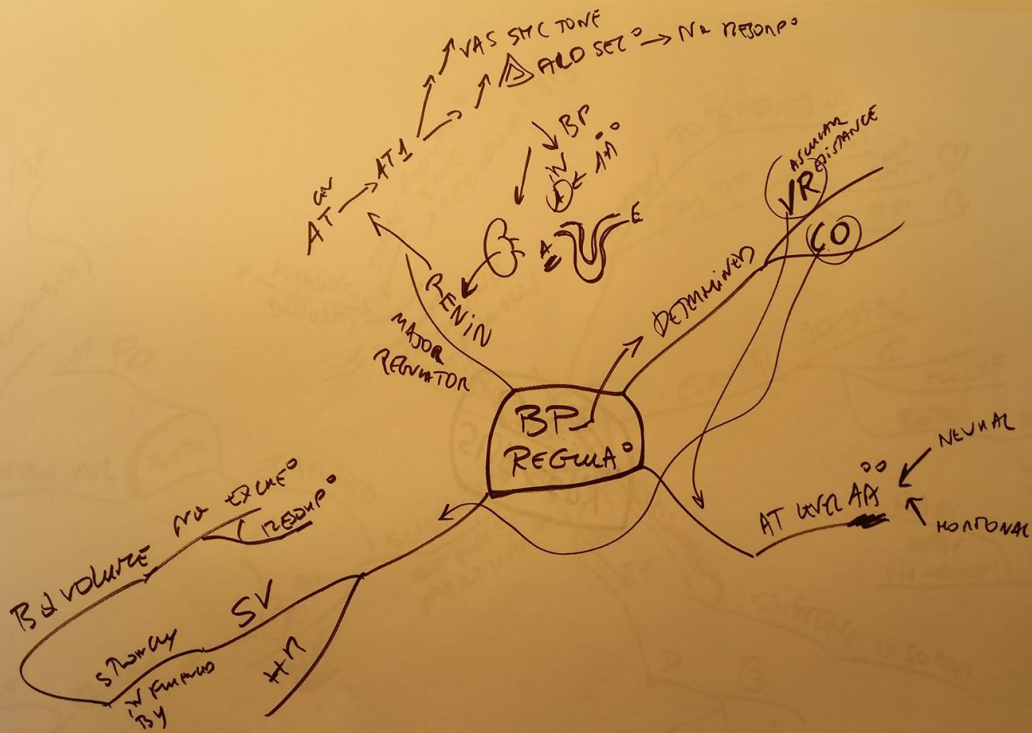
② EVERYTHING ELSE

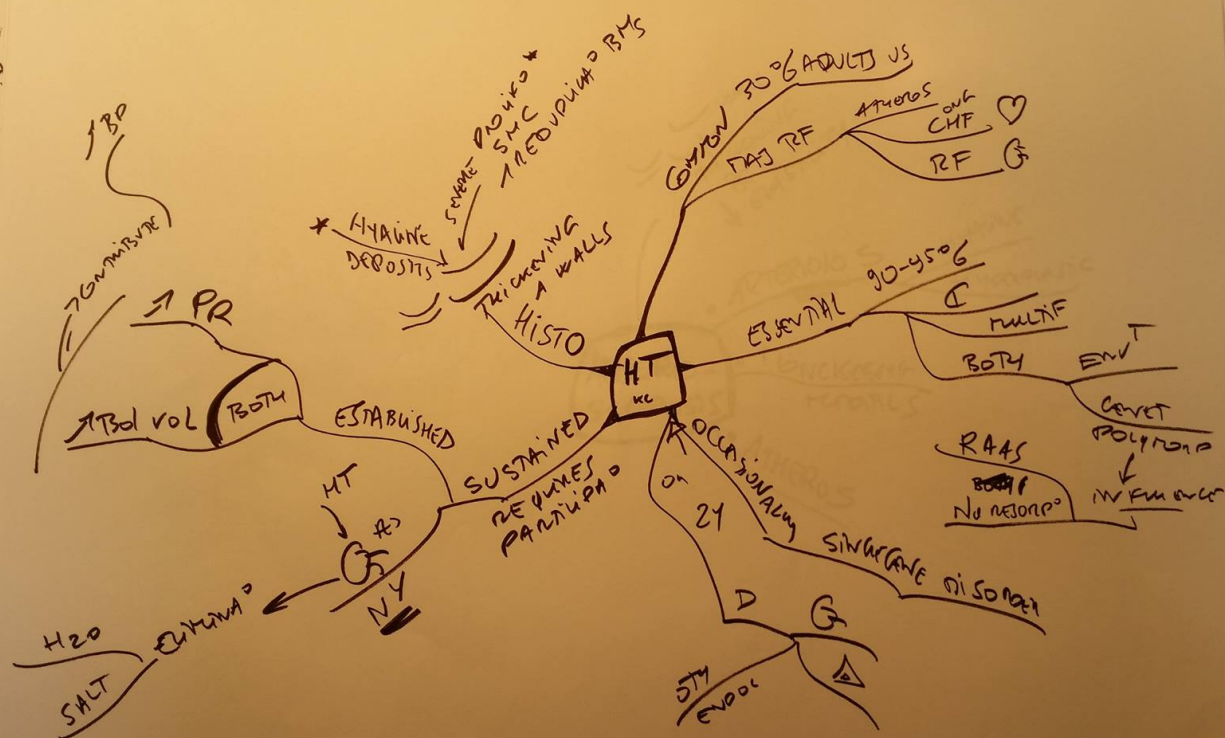
3 ?

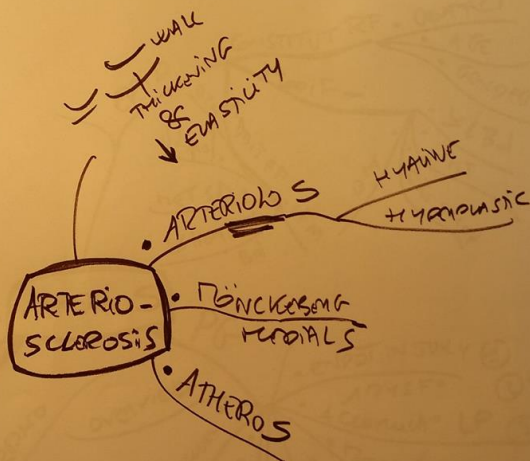


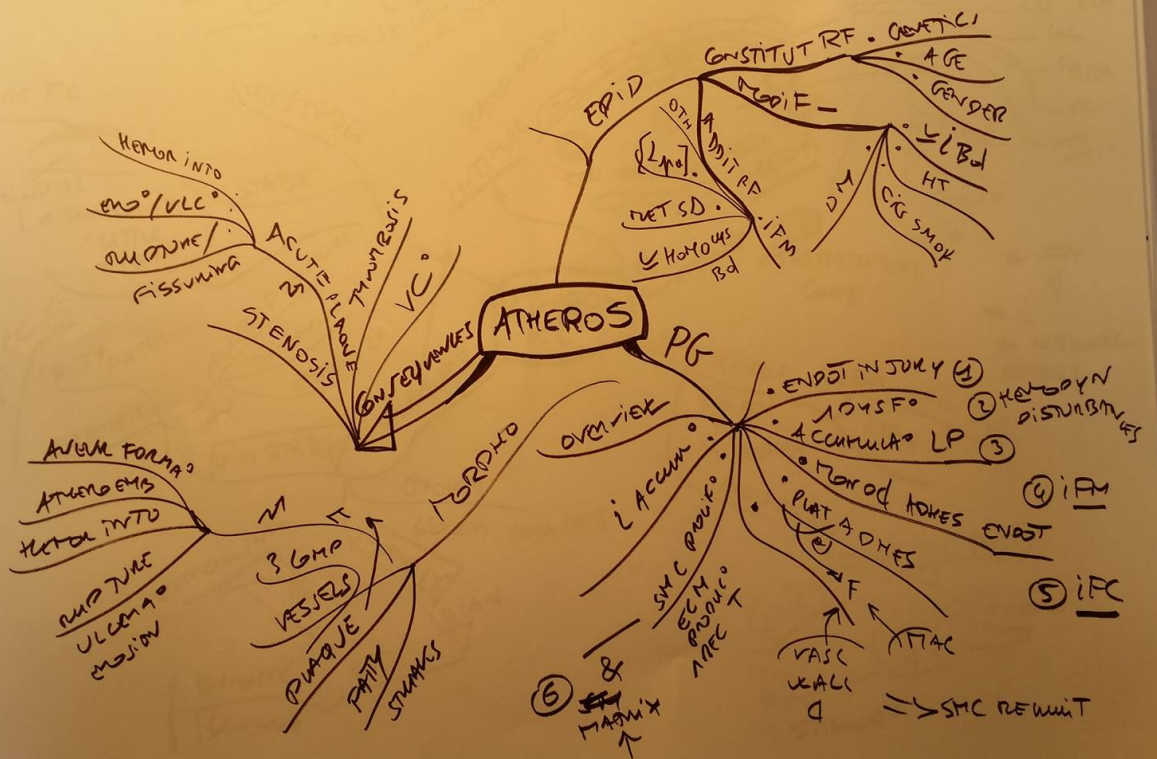


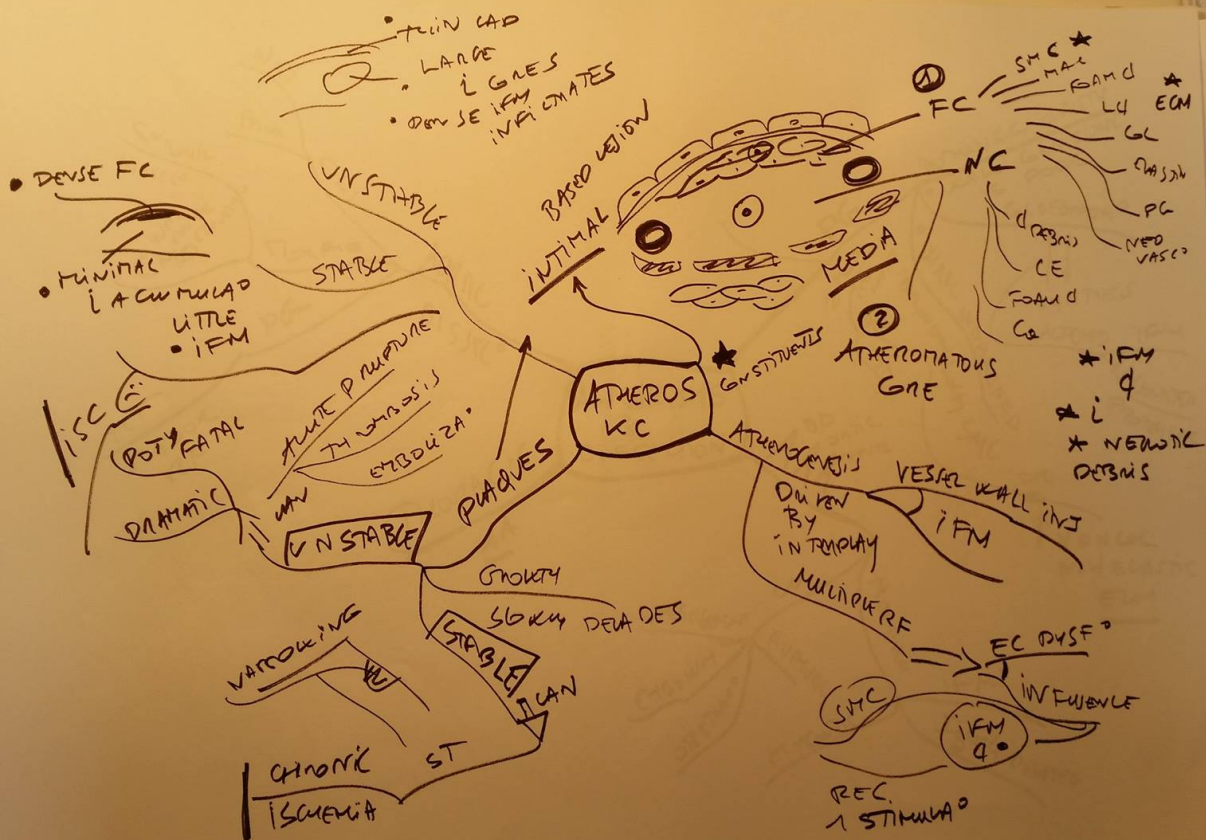


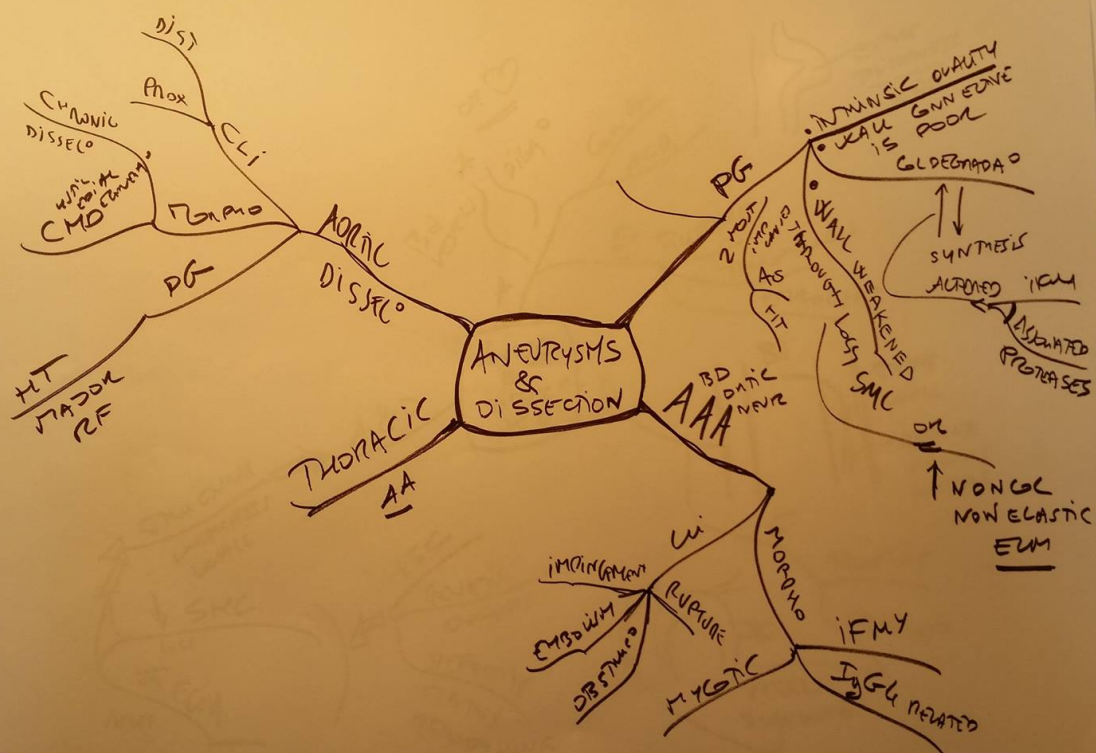


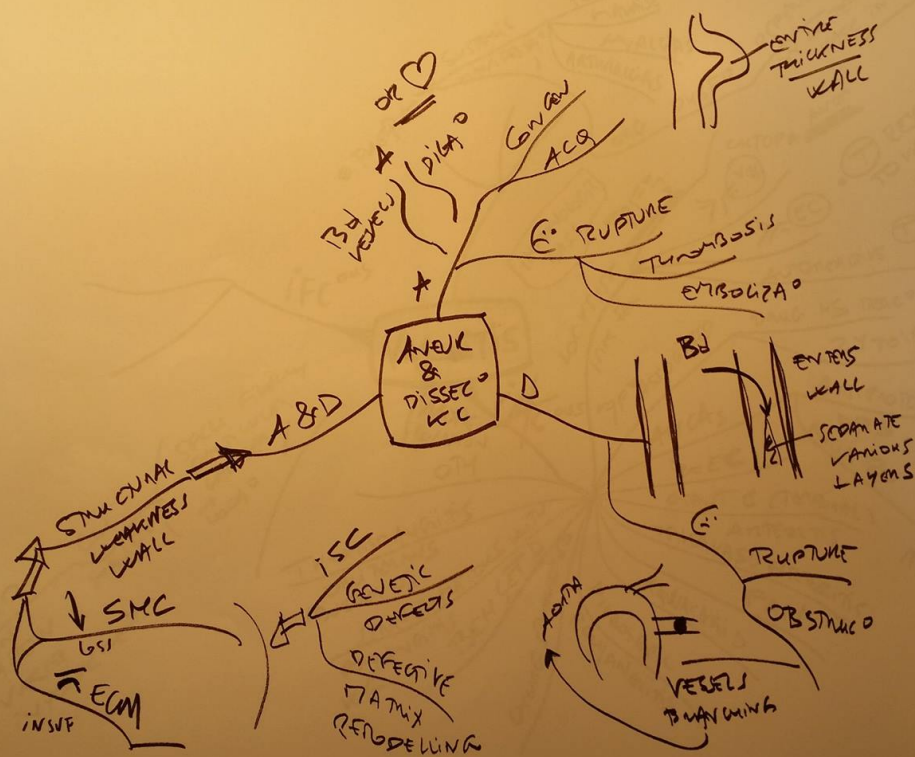


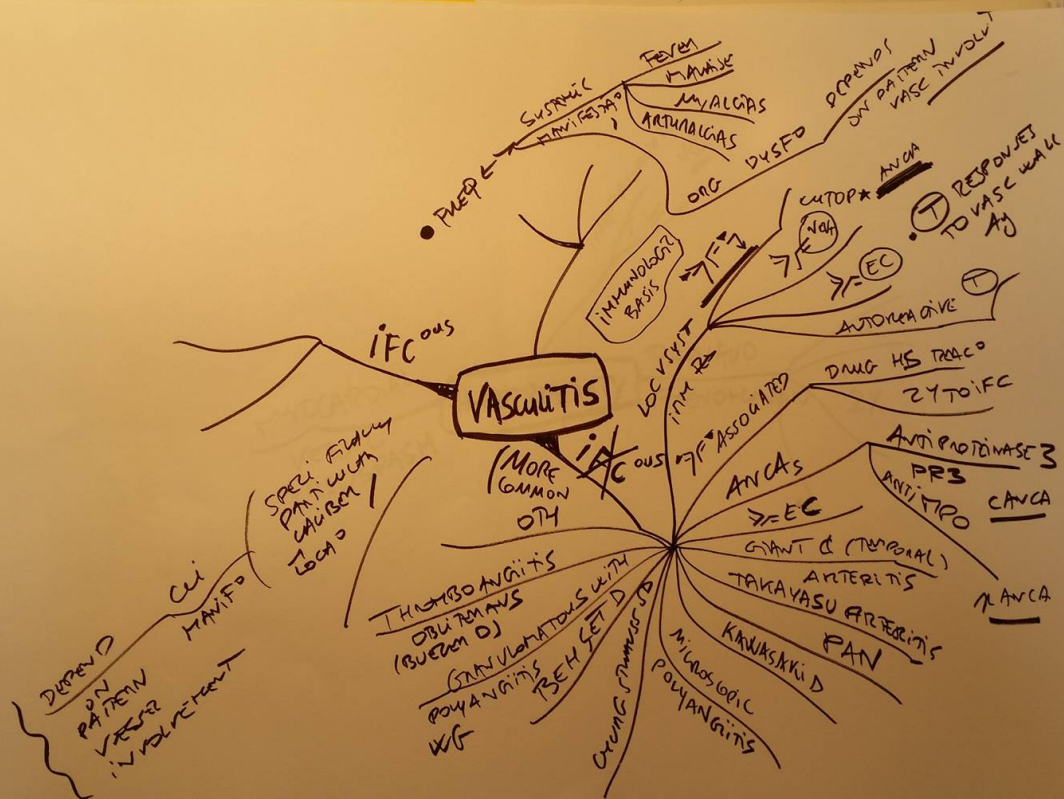




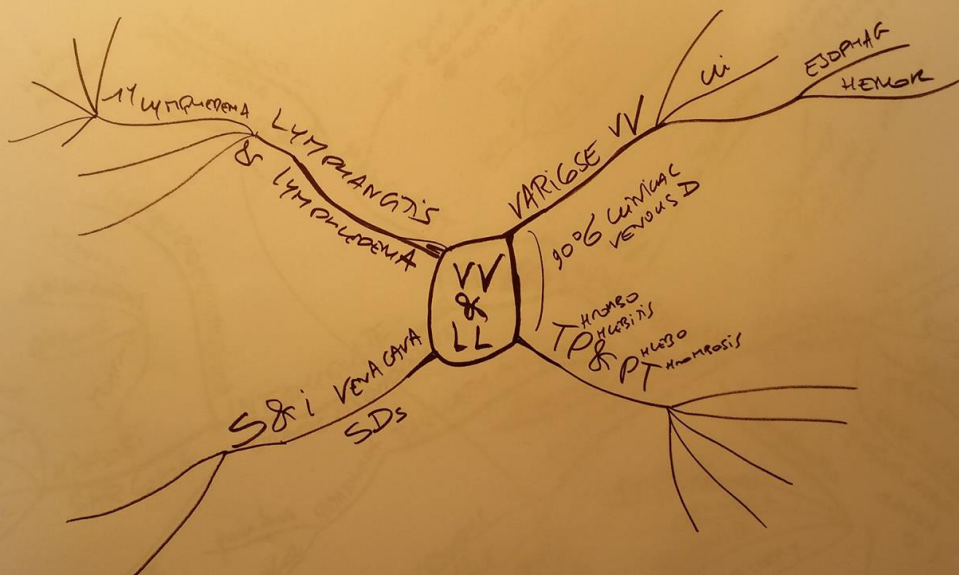


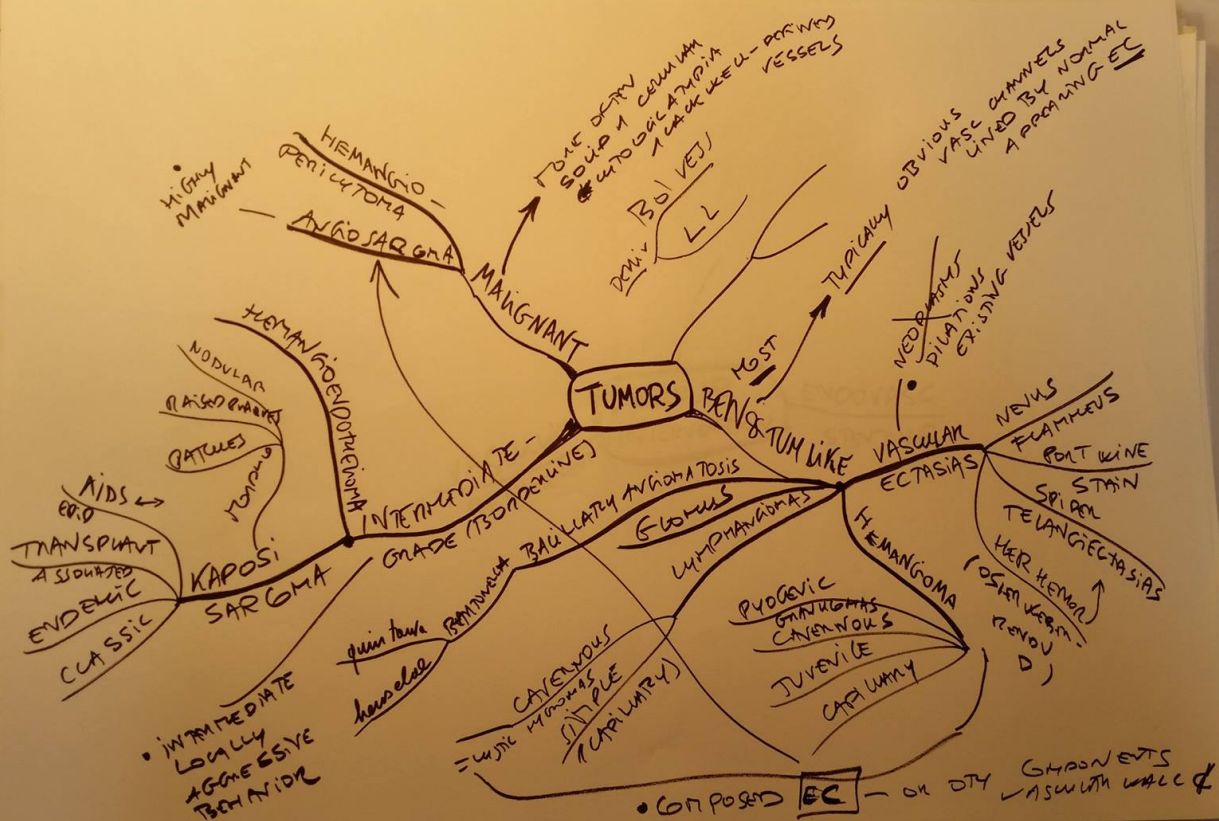


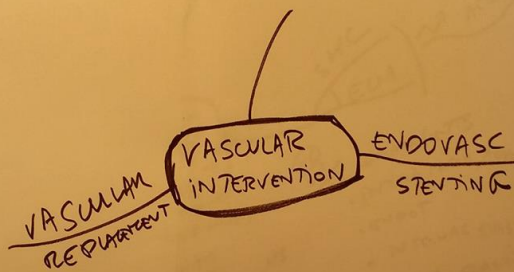




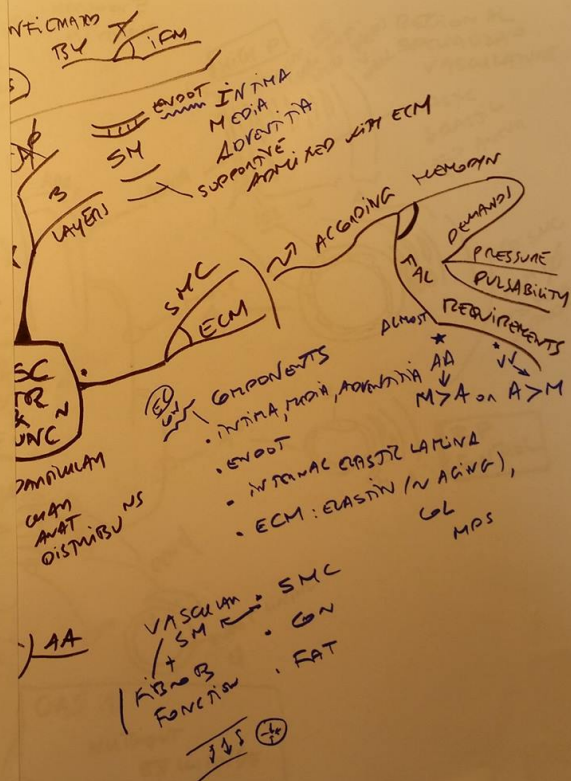






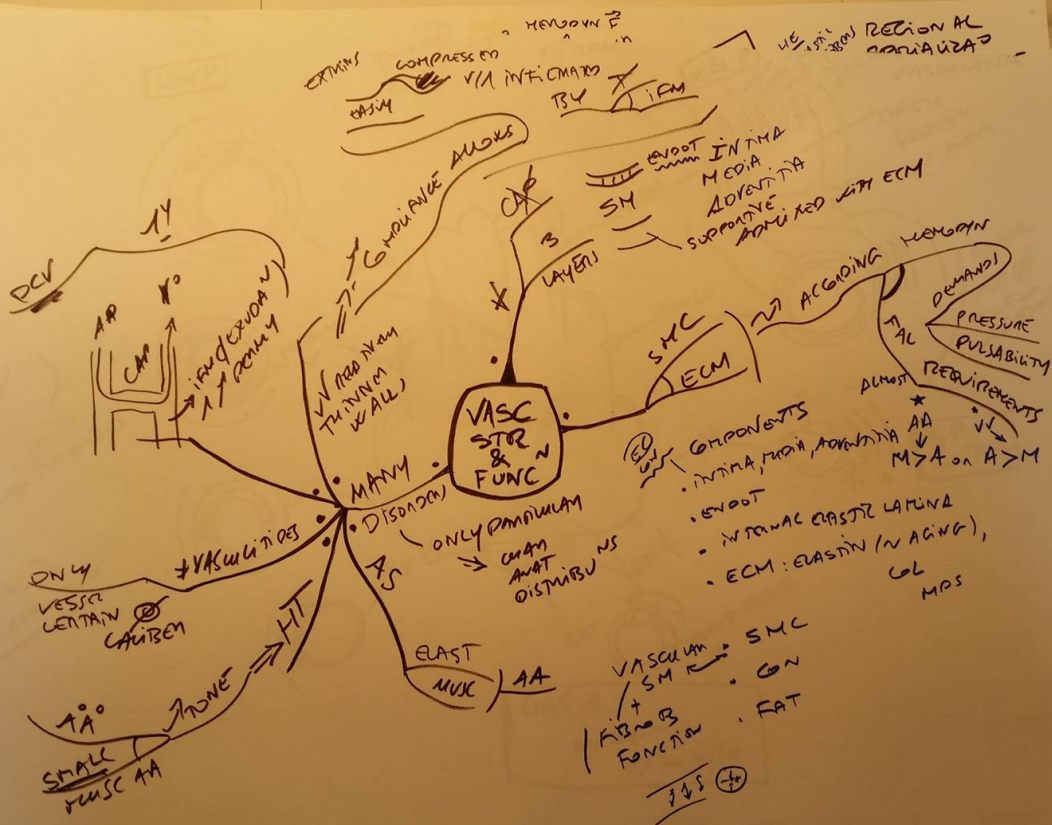


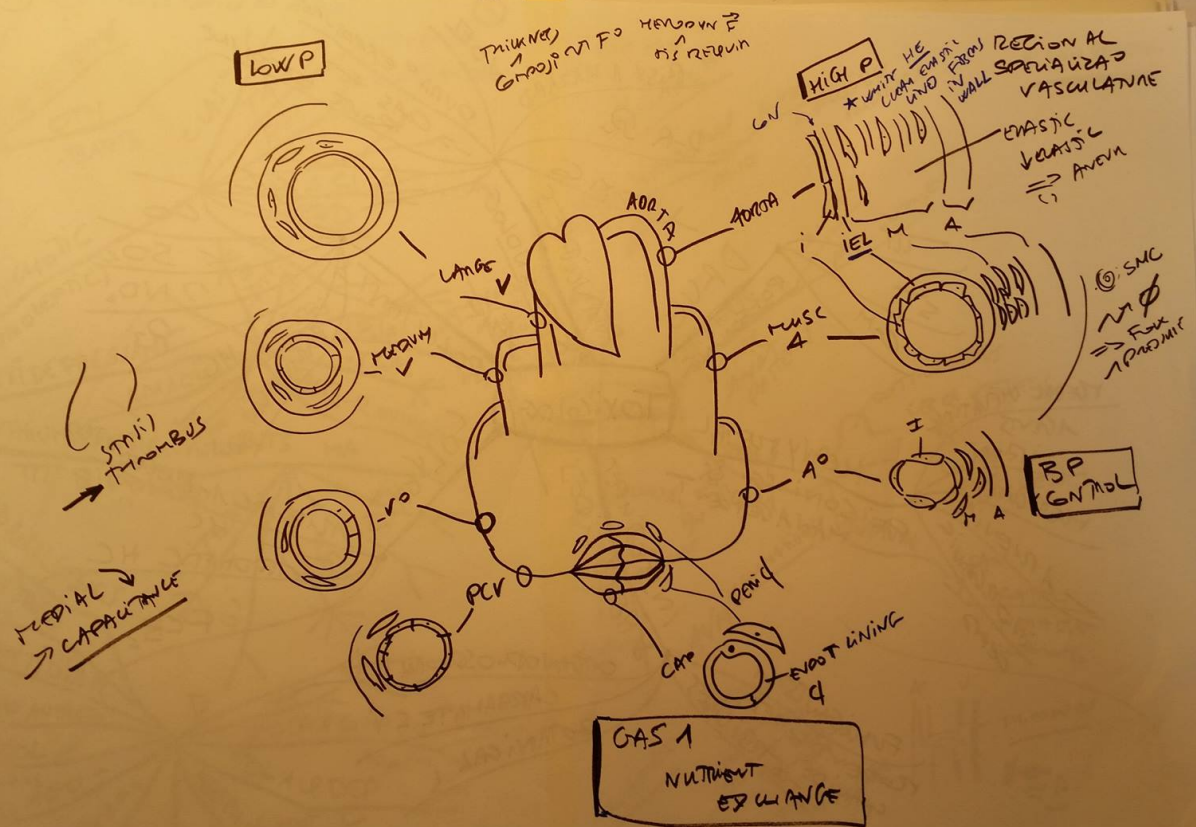
IS



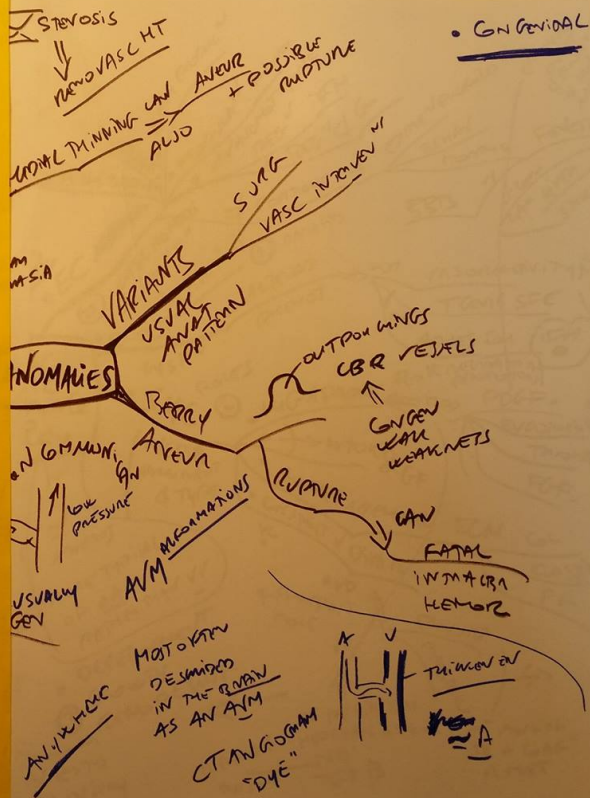
STR & FUNC^o

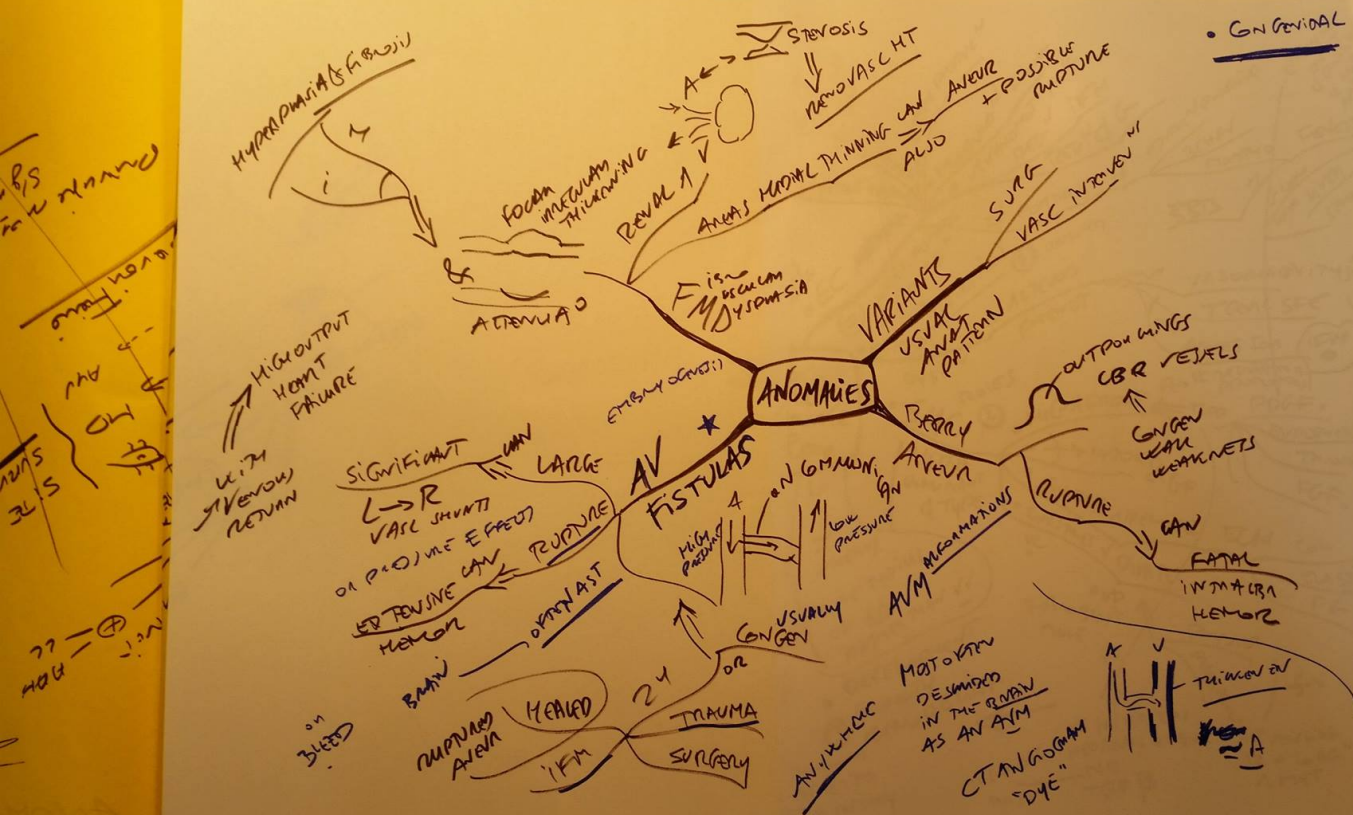
ZOLP
 ESZOL
 FLUM
 ABUS
 LOC
 ANEST
 CN
 ANTI-PARKINSON
 & ALZHEIMER

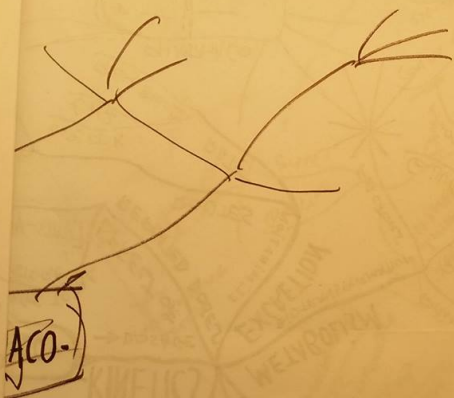




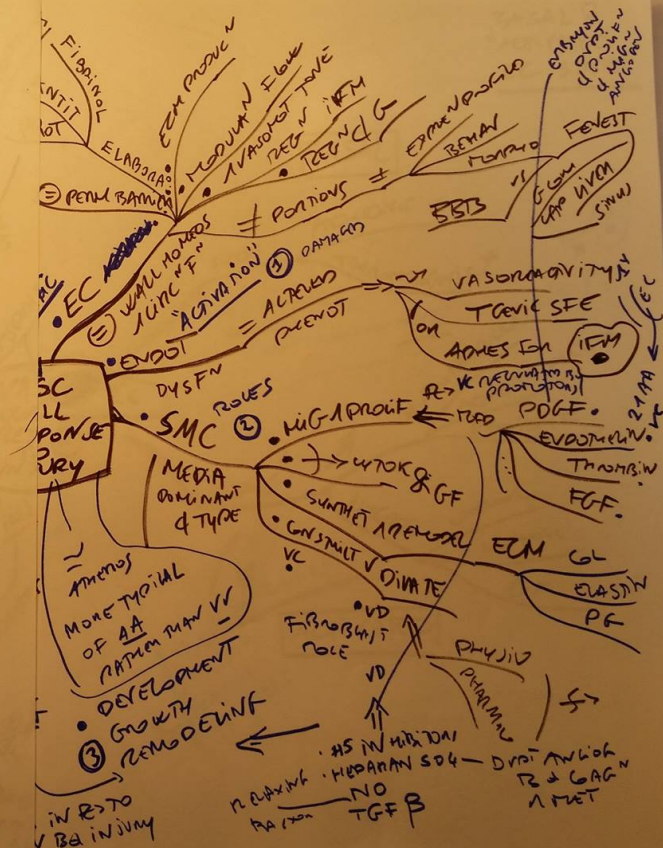
ANOMALIES

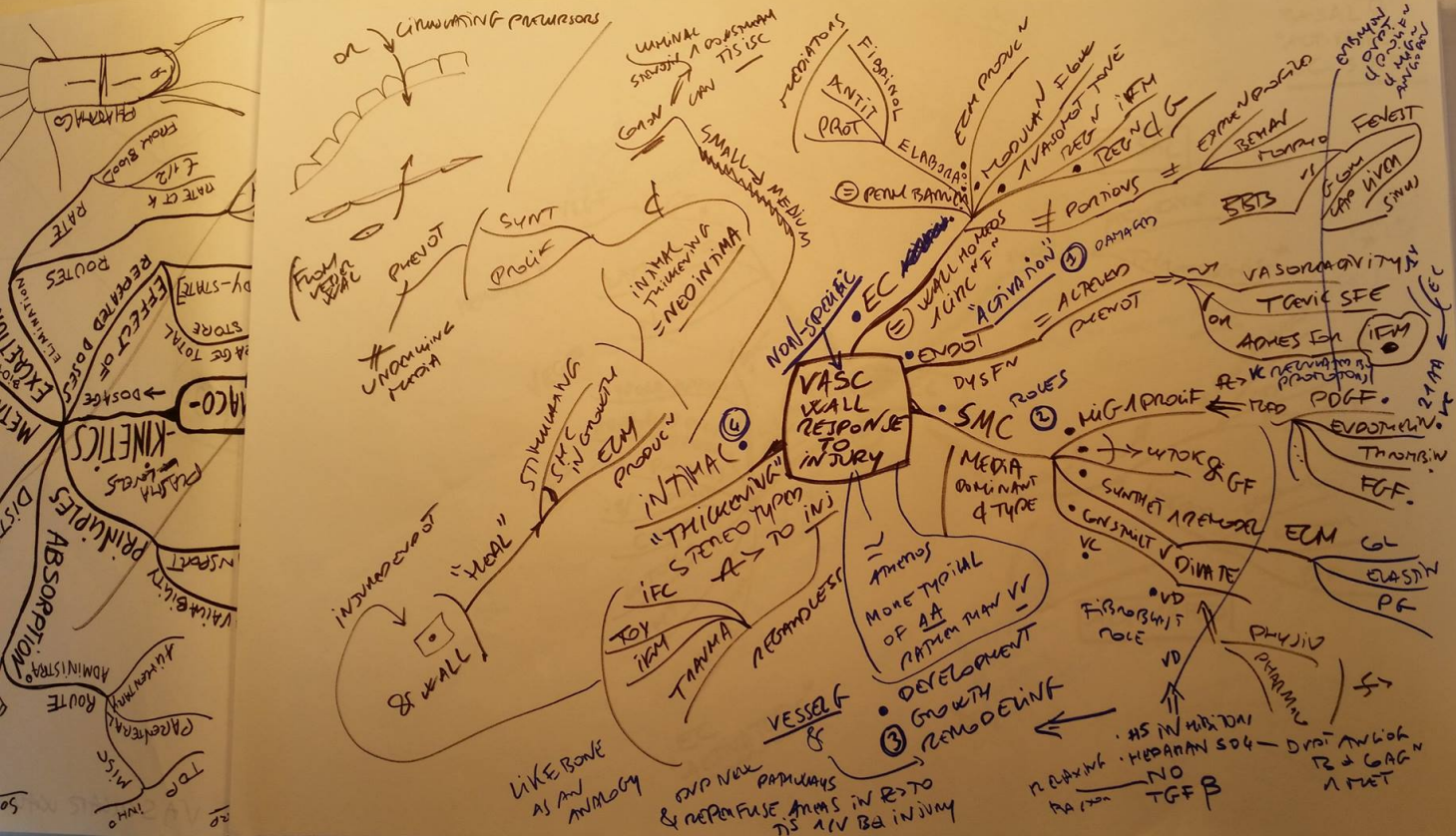






+ VASCULAR WALL RESPONSE TO INJURY

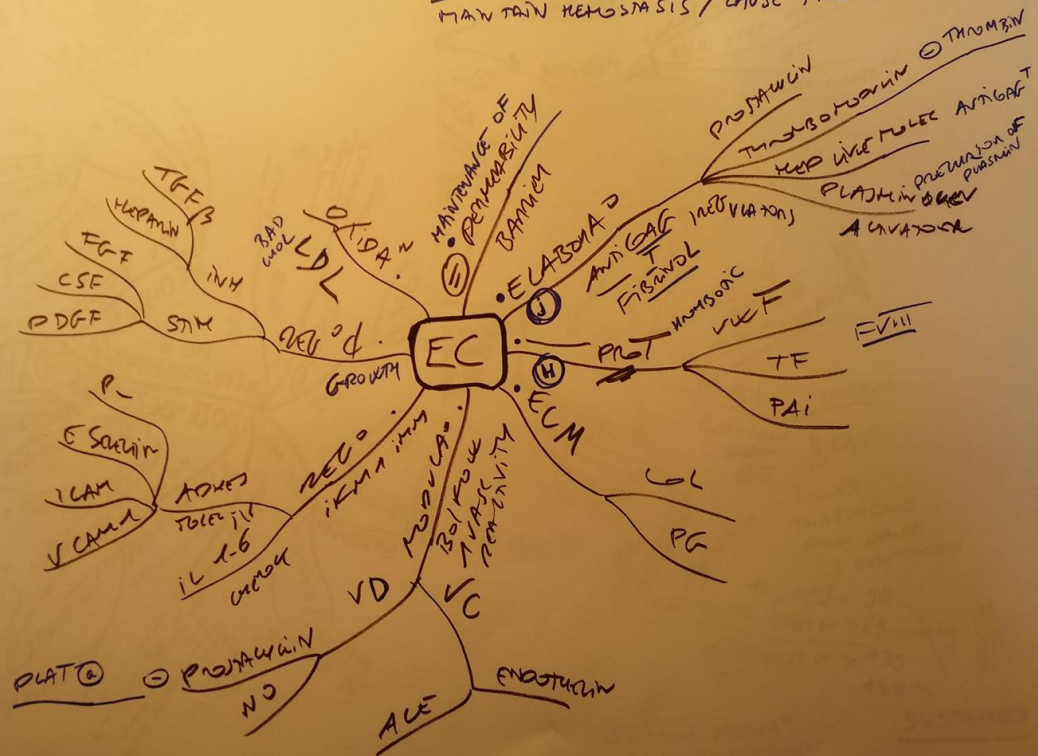




BASAL & "ACTIVATED" EC STATES

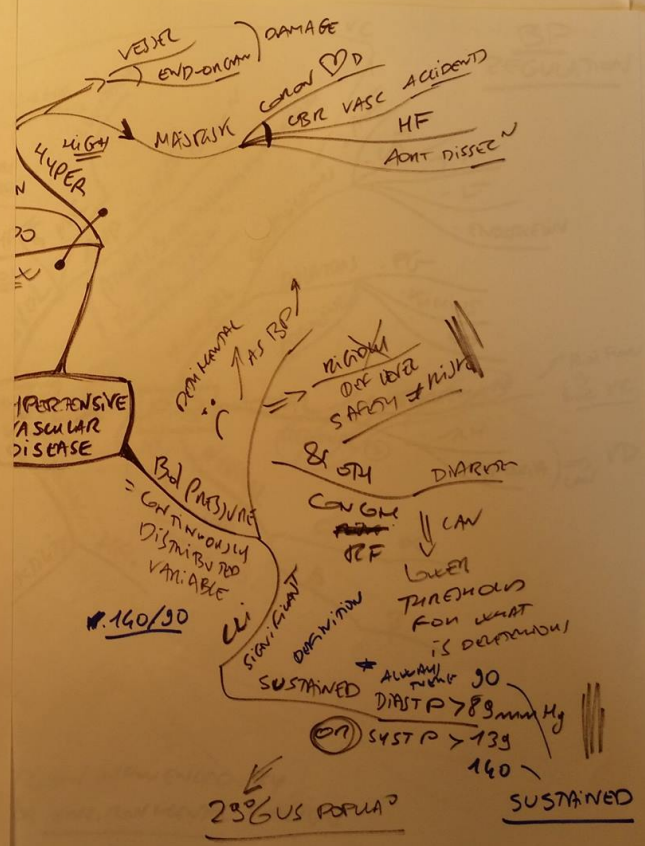


JECKYL / HYDE GROUP:
 MAINTAIN HEMOSTASIS / CAUSE THROMBOSIS

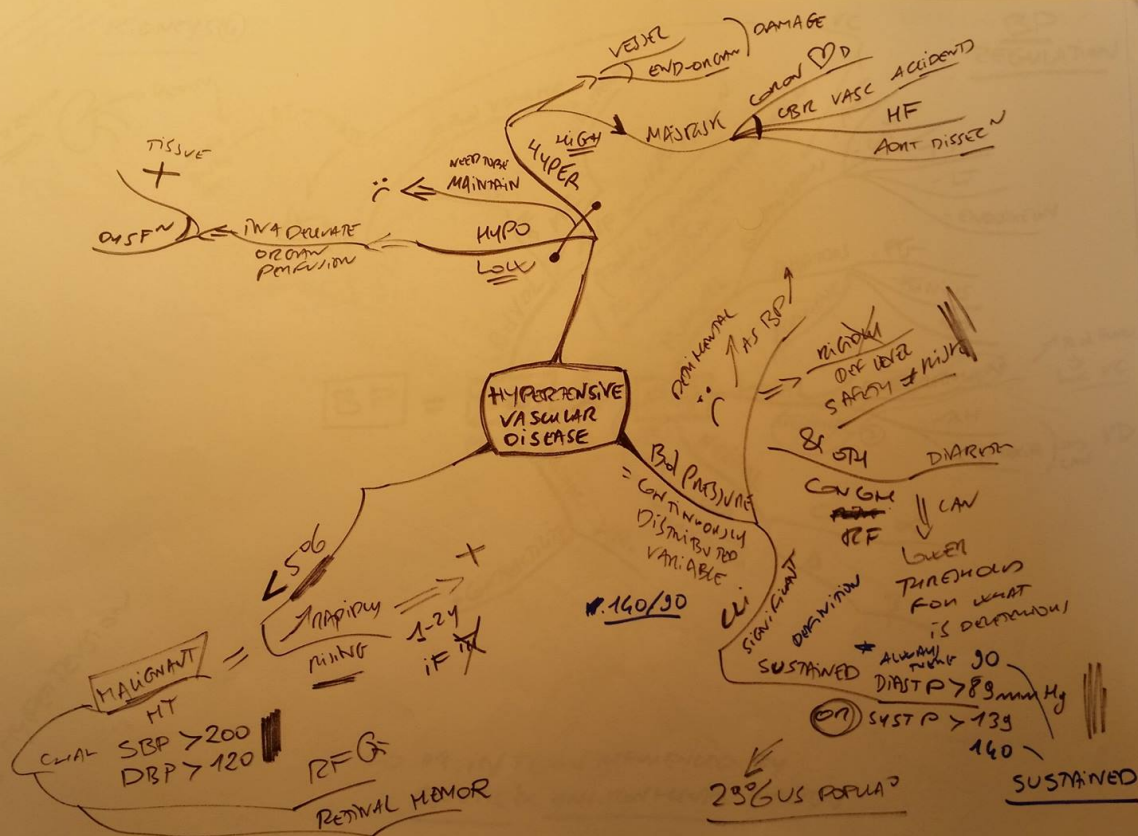


PHARM

HT



NA



BP REGULATION



CO P2 IN TURN INFLUENCED BY
GENETIC & ENVIRONMENTAL FACTORS

N! GUSIY V

NA



* Dominant effects

BP REGULA^N

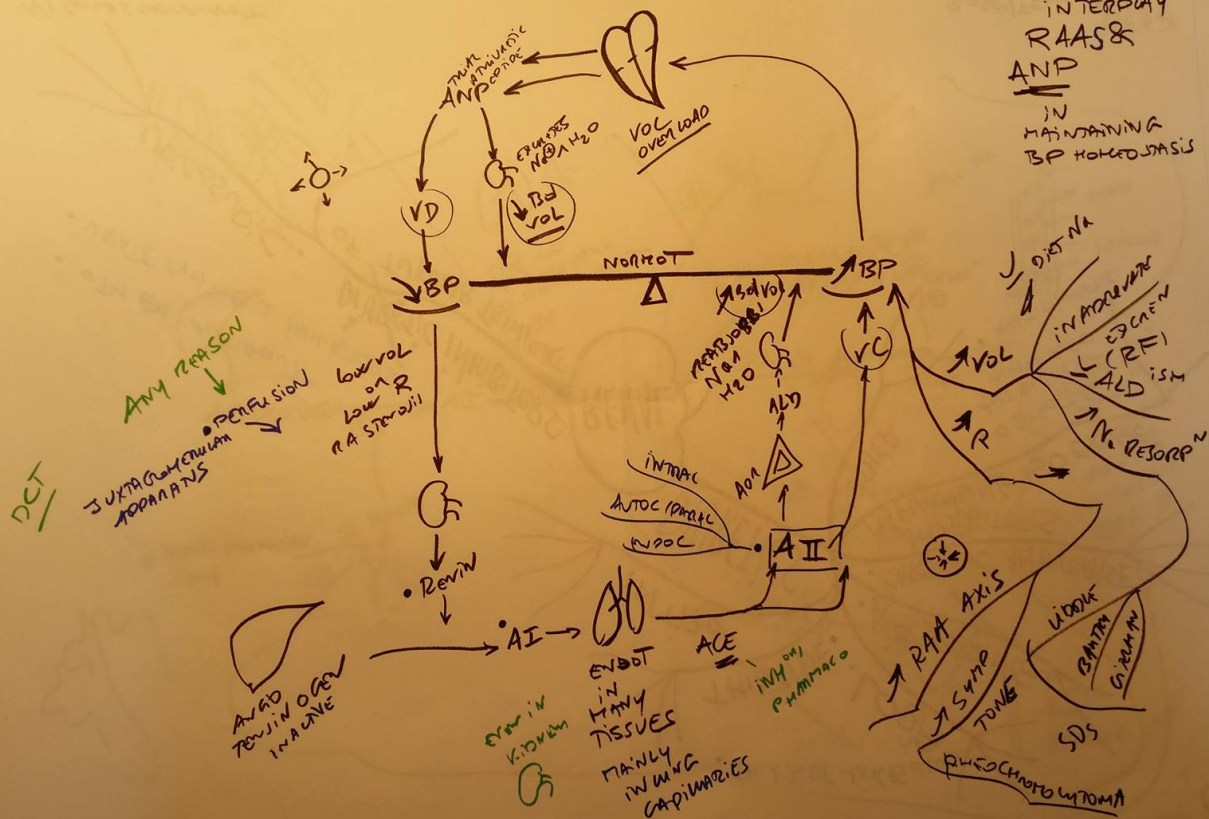


LOCAL
MUTUAL
NORMAL OR

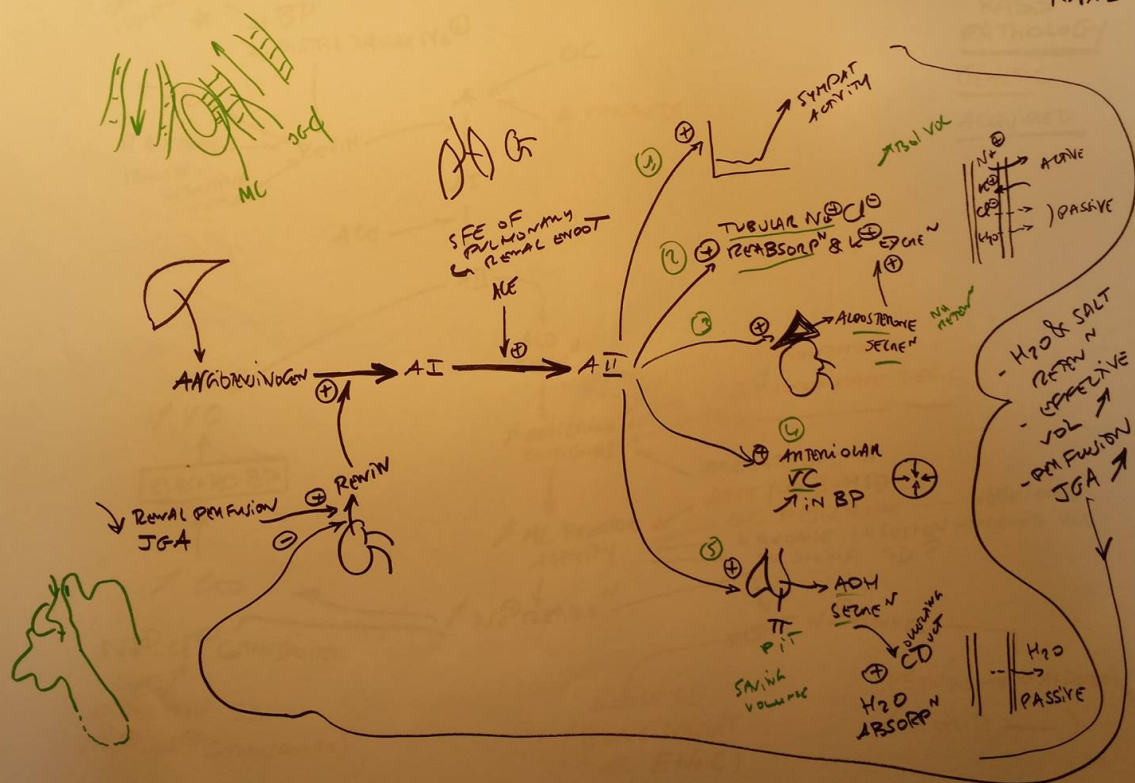
BLOOD PRESSURE

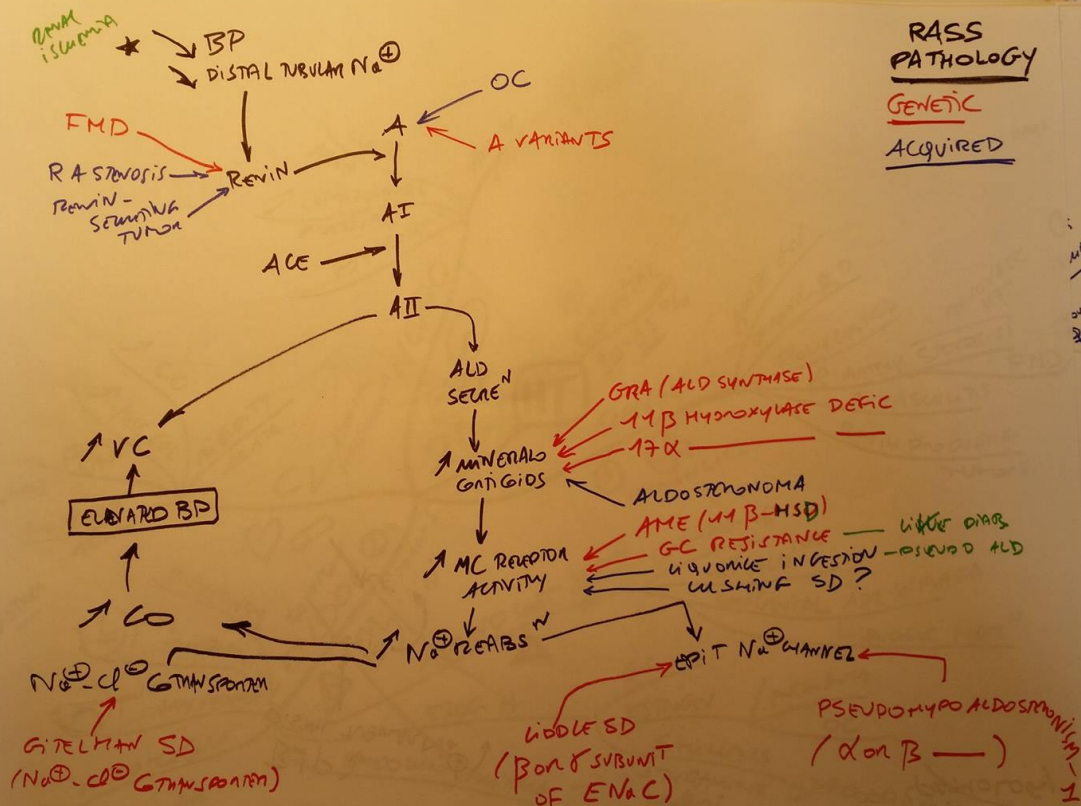


INTERDAY RAAS & IN MAINTAINING BP HOMEOSTASIS

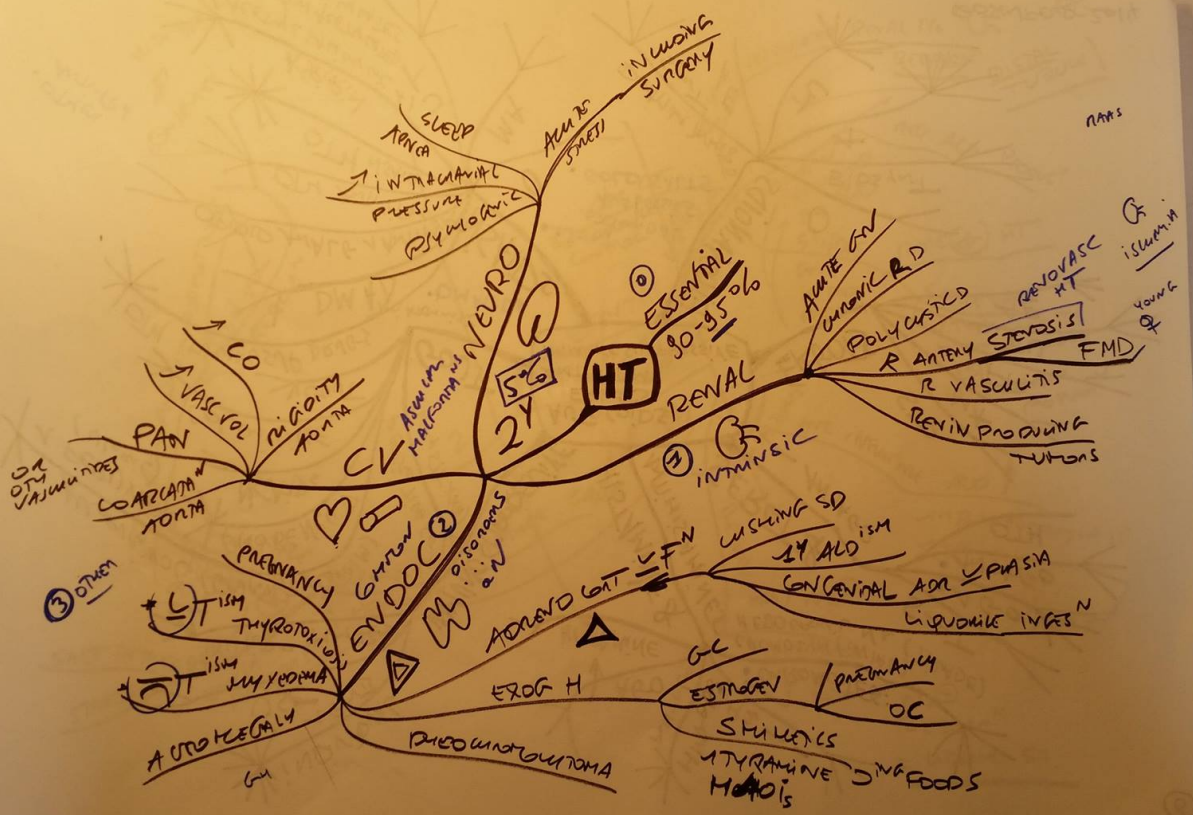


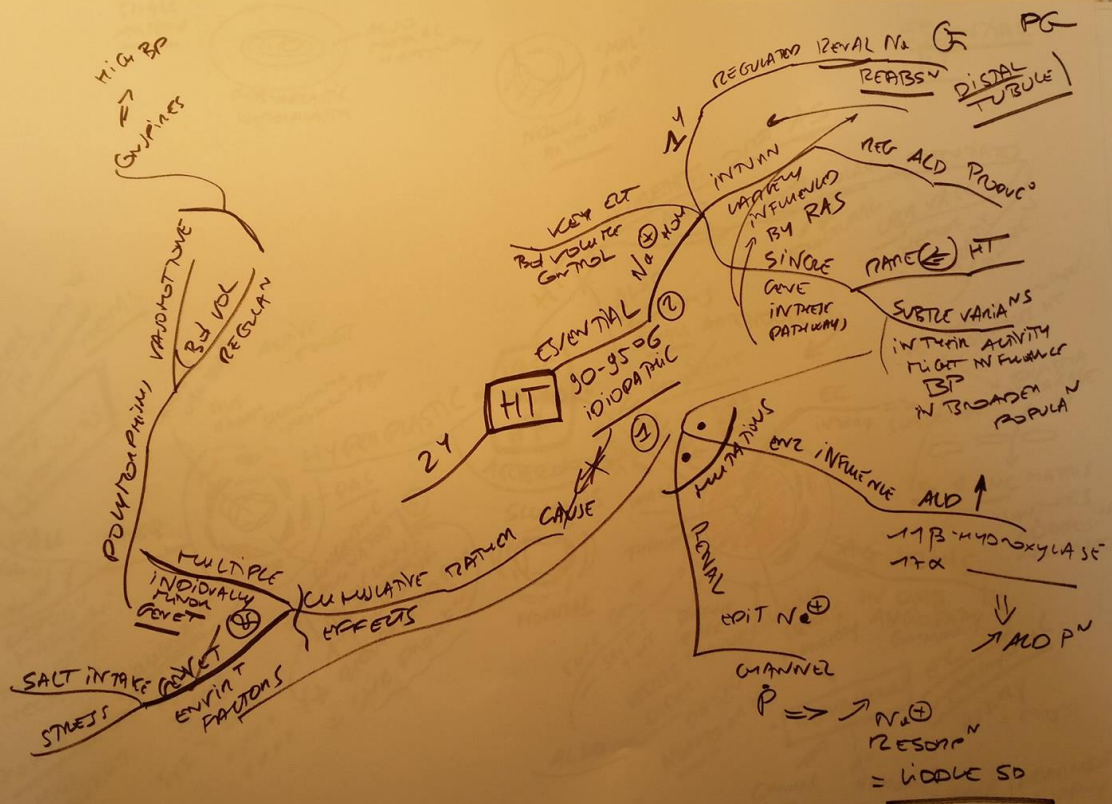
RAAS





TIA

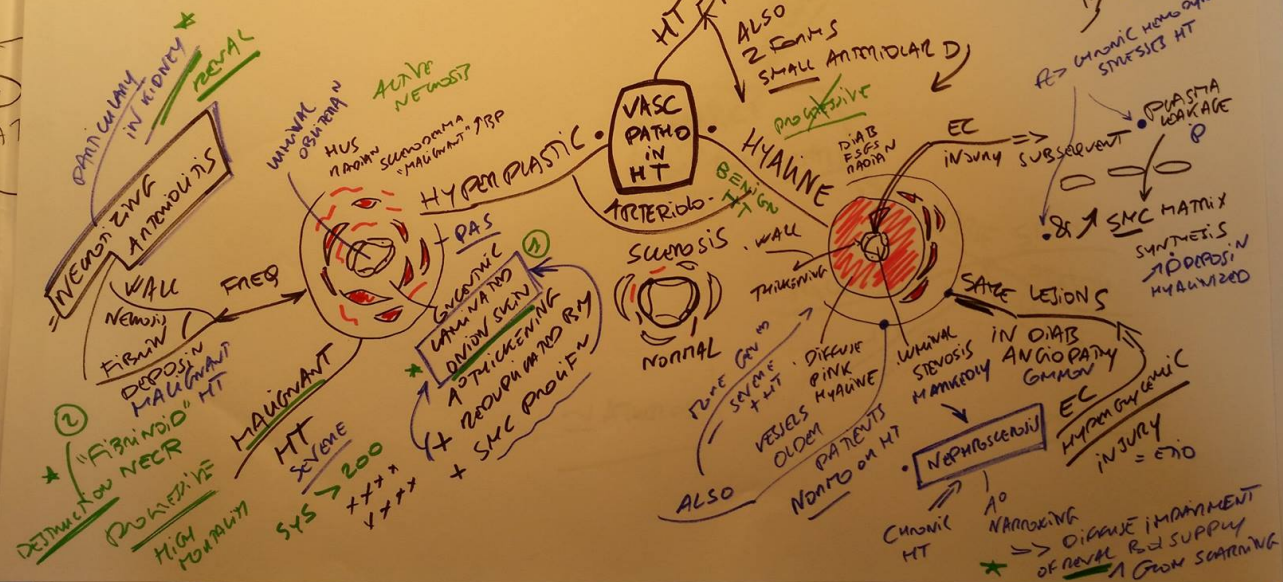




Small
Artery



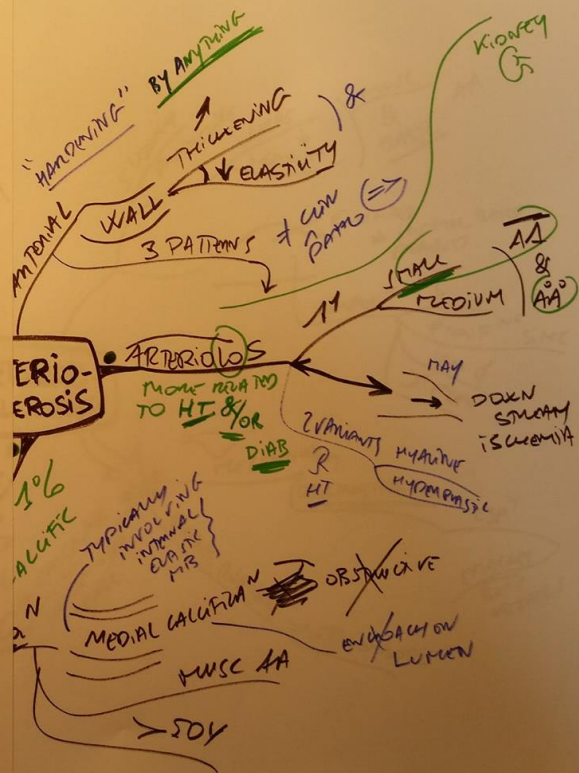
ESSENTIAL
HT



D
NATRA



ARTERIO SCLEROSIS



1 ~~α~~ 2 β 1 β 2



CLASSICAL

1. ETIO/RF
2. PF
3. MORPH
4. CLIN

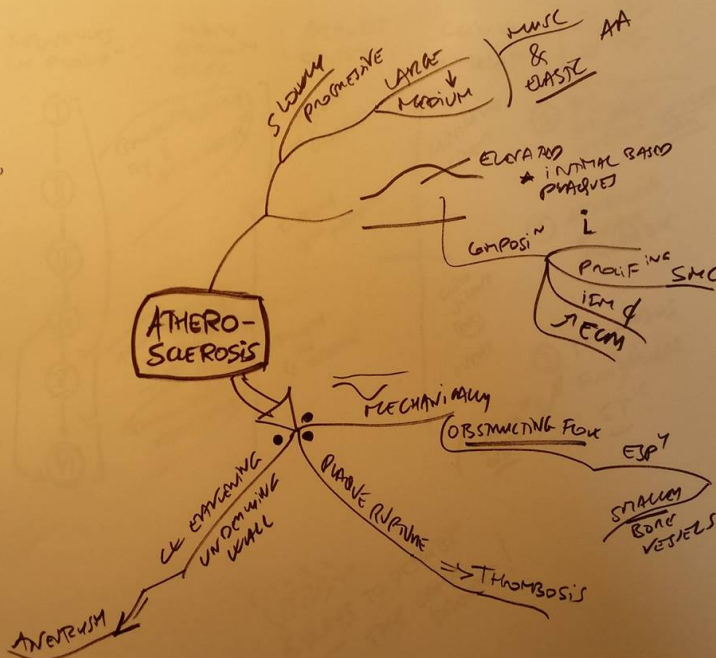
CHARACTERISTICS OF A.D. DISEASES

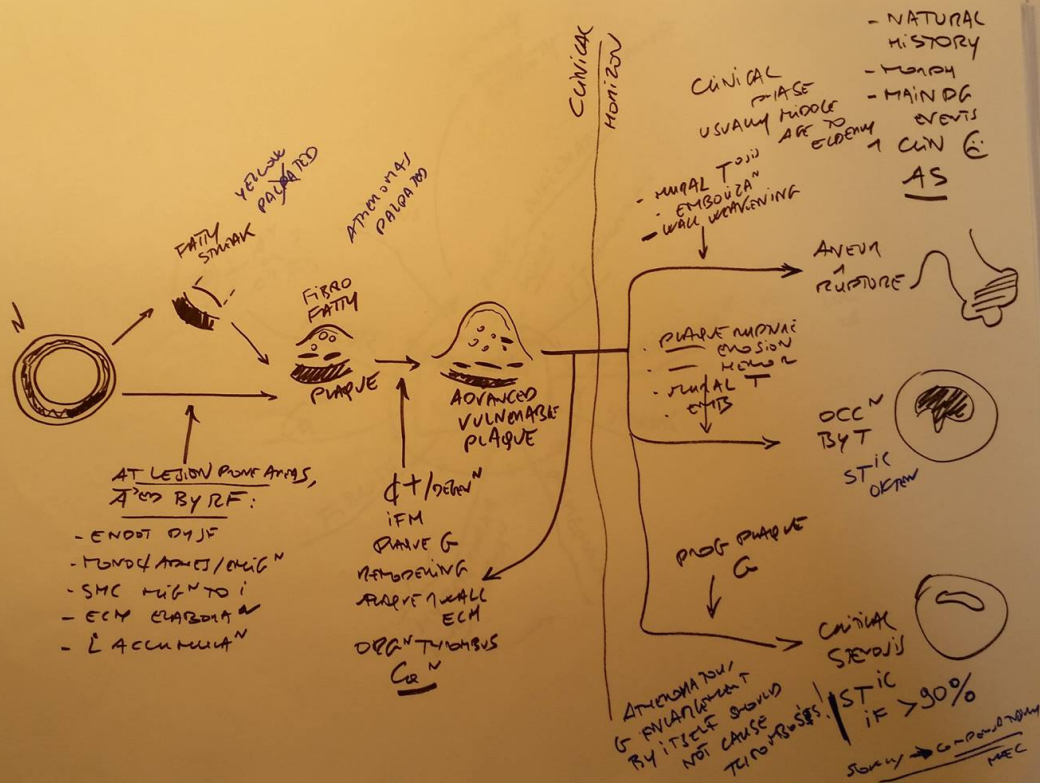
ALCA ROBBINS

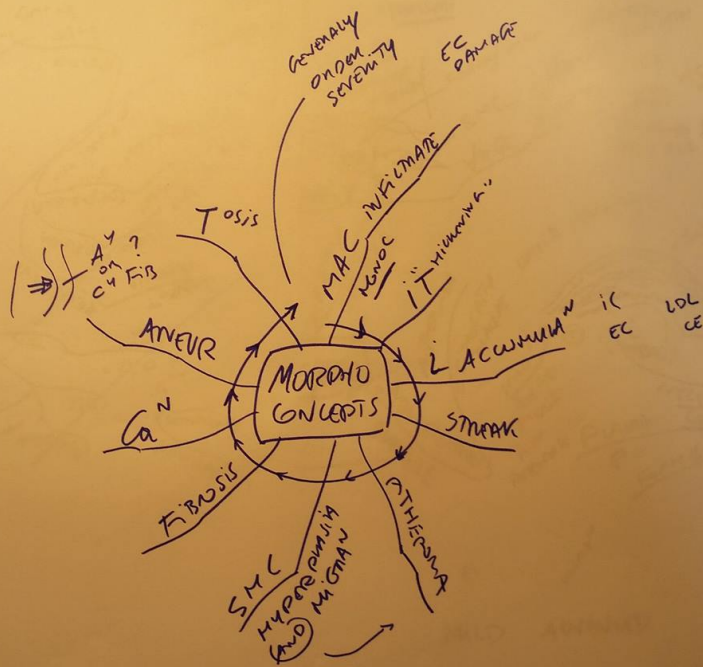
- NATURAL HISTORY
- ETIO
- RF
- PG
- OTH F
- EFFECTS
- PREVENTION

NOTHING LISTED AS "CAUSE"

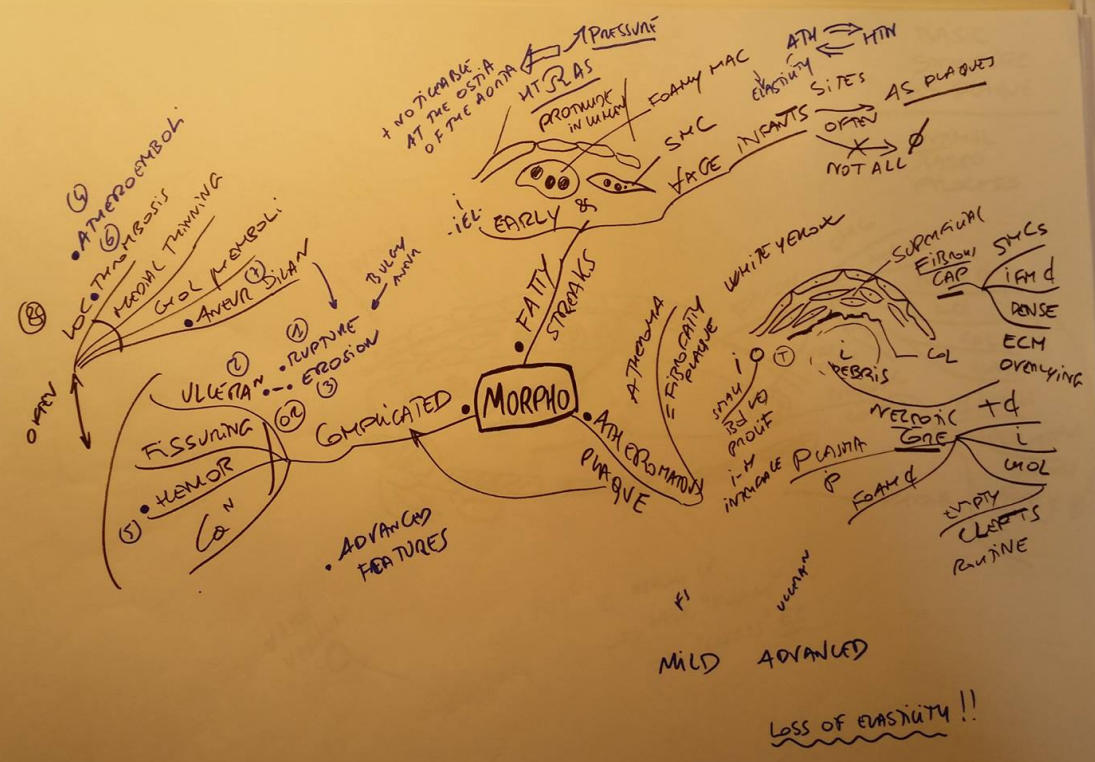
ATHERO-SCLEROSIS





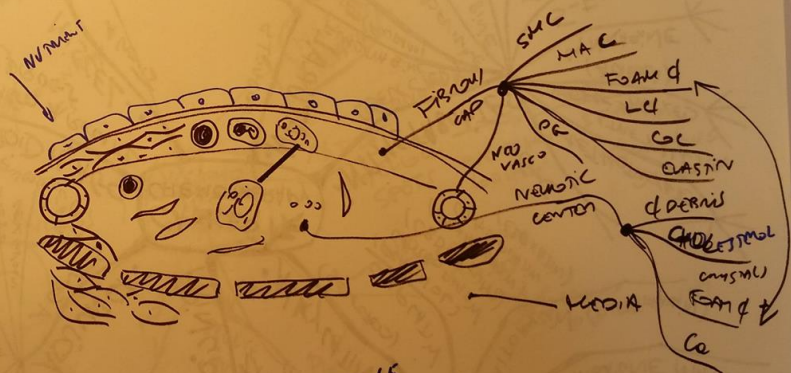


(39) B.B. Bennett



BASIC STRUCTURE AS PLAQUE

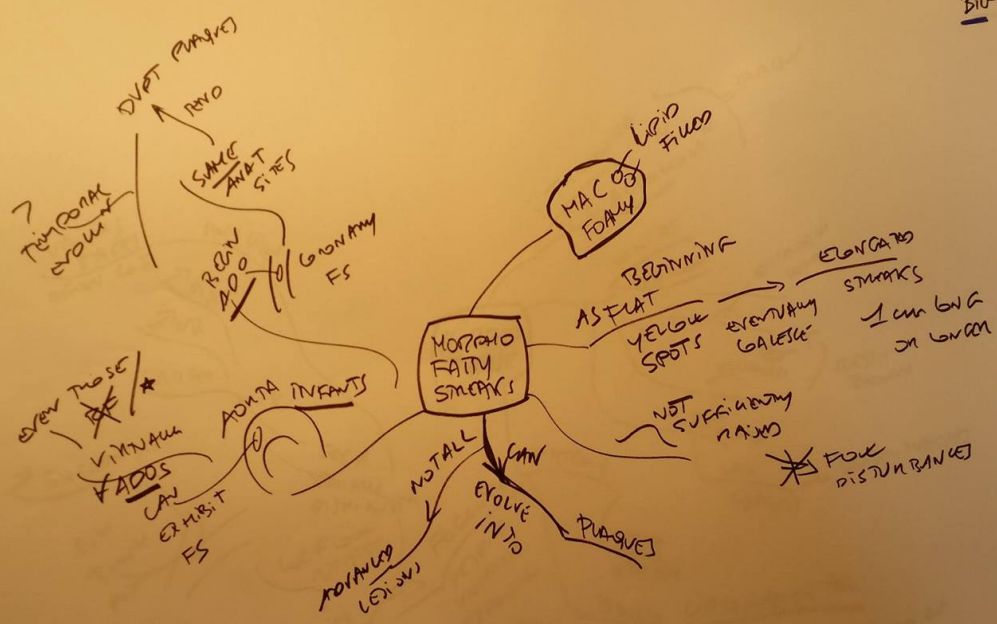
INITIAL BASCO PROCESS



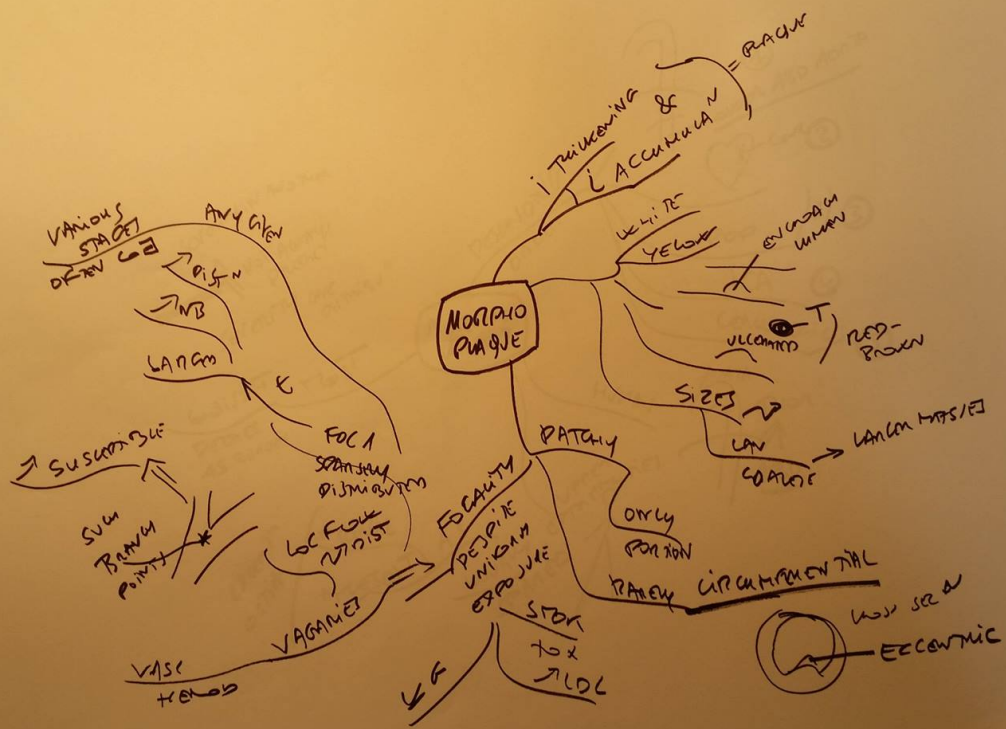
VASO
VASCULUM

C NEARLY CE
→ MAC "FOAM"
⇒ "CEFTS" EC

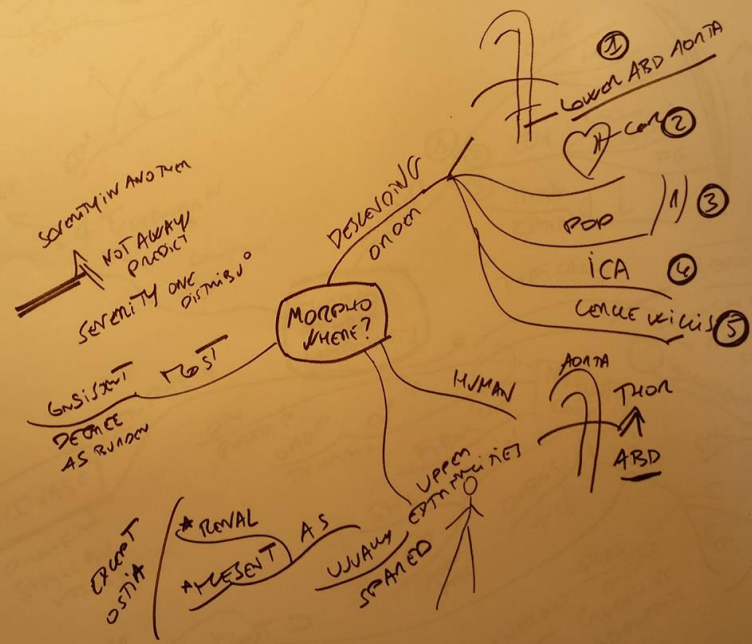
Big



BIG



Big



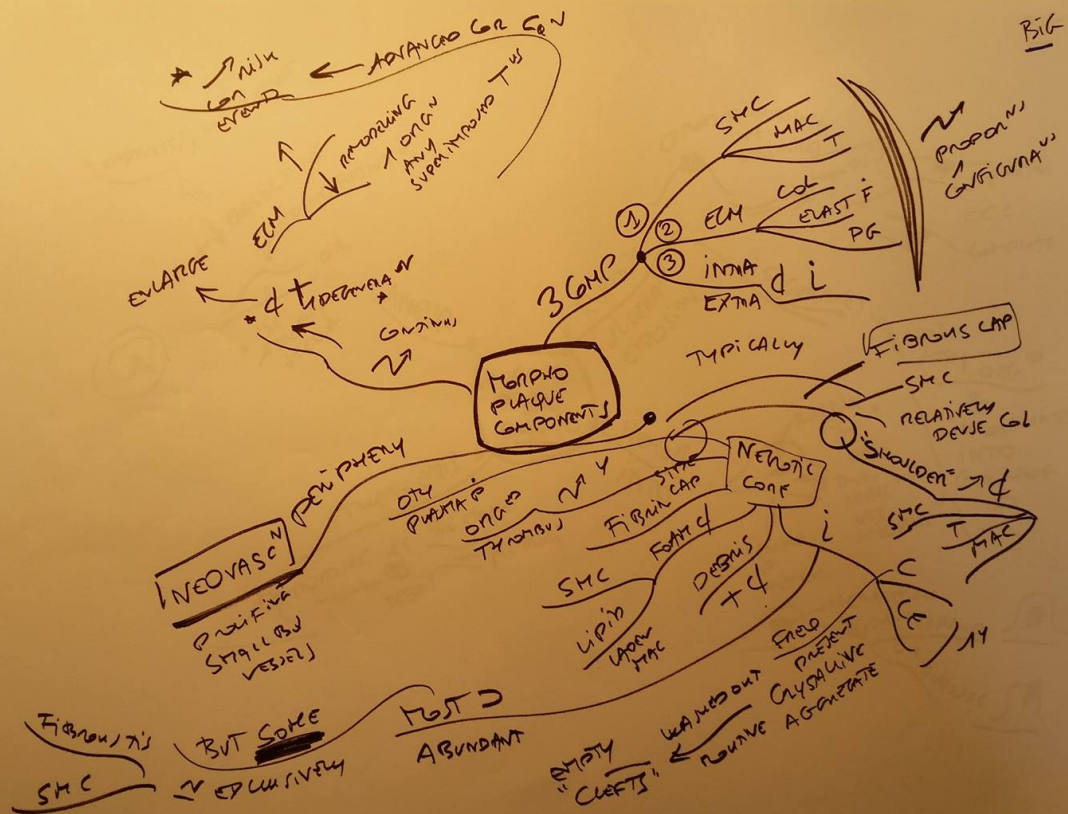


Diagram illustrating the pathogenesis of Atherosclerosis:

- WEAKNESS / POT. RUPTURE** leads to **↓ ELASTIC TISSUE** and **↑ INDUCED PRESSURE**.
- ISC. ATHEROSCLEROSIS** (Intima Sclerosis) is associated with **ANEUR.** (Aneurysm).
- MONONUC. PHAGOCYTES** (Mononuclear Phagocytes) are central to the process, leading to **RUPTURE**, **ULCERATION**, and **EROSION**.
- HEMOR. INTO** (Hemorrhage into the vessel wall) is a consequence.
- IF SURVIVES** (If survives), it leads to **CLOT FORM. ORG.** (Clot formation or organization).
- CLOT FORM. ORG.** leads to **INCORPORATED INTO GROWING P.** (Incorporated into growing plaque).
- RUPTURE FC.** (Rupture focus) leads to **TRAMP WITH VES. NEOVASC.** (Trapped with vessels and neovascularization).
- INTRA P. HEMOR.** (Intraplaque hemorrhage) is shown.
- HEMATOMA** (Hematoma) is formed.
- MAX. EXPAND.** (Maximum expansion) is reached.
- OR RUPTURE** (or rupture) is the final outcome.

The diagram also includes a small sketch of a vessel cross-section showing the lumen, intima, and media layers, with a focus on the intima where the plaque is developing.

POST ARTERIALS
DIABETICS

UNUSUAL
VASCULAR AS CAN BE IN
OR STAIN

ONE DISJUNCT
AS ATY

ATY AND
CIGARETTE

W3FA GOOD
UNSAT FA GOOD

LOW CHOL DIET GOOD
HDL MODERATES CHOL
FROM ATY AND
TO LIVER

LDL → HDL
LDL → HDL
LDL → HDL

LDL → HDL
LDL → HDL
LDL → HDL

LDL → HDL
LDL → HDL
LDL → HDL

LDL → HDL
LDL → HDL
LDL → HDL

IFM
DIAB
STROKE
HT

HT
STROKE
DIAB

STROKE
DIAB
HT

DIAB
HT
STROKE

HT
STROKE
DIAB

STROKE
DIAB
HT

DIAB
HT
STROKE

HT
STROKE
DIAB

MODIFIABLE
MAJOR
MAJOR

MAJOR
MAJOR
MAJOR

MAJOR
MAJOR
MAJOR

MAJOR
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MAJOR

MAJOR
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MAJOR
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MAJOR

MAJOR
MAJOR
MAJOR

MODIFIABLE
CONSTITUTIONAL

CONSTITUTIONAL
MODIFIABLE

MODIFIABLE
CONSTITUTIONAL

CONSTITUTIONAL
MODIFIABLE

MODIFIABLE
CONSTITUTIONAL

CONSTITUTIONAL
MODIFIABLE

MODIFIABLE
CONSTITUTIONAL

CONSTITUTIONAL
MODIFIABLE

RELATED
TO "DIET" OF NATION
• 50-70%
• WHY "AMERICAN" DIETARY HABITS

1103-2000
• GENETIC INFLUENCE
• FAM HISTORY
• AGE

AGE
FAM HISTORY
GENETIC INFLUENCE

GENETIC INFLUENCE
FAM HISTORY
AGE

FAM HISTORY
AGE
GENETIC INFLUENCE

AGE
GENETIC INFLUENCE
FAM HISTORY

GENETIC INFLUENCE
FAM HISTORY
AGE

FAM HISTORY
AGE
GENETIC INFLUENCE

UNUSUAL
ESTROGEN PROTECTION

ESTROGEN PROTECTION
UNUSUAL

UNUSUAL
ESTROGEN PROTECTION

ESTROGEN PROTECTION
UNUSUAL

UNUSUAL
ESTROGEN PROTECTION

ESTROGEN PROTECTION
UNUSUAL

UNUSUAL
ESTROGEN PROTECTION

ESTROGEN PROTECTION
UNUSUAL

UNUSUAL
ESTROGEN PROTECTION

ESTROGEN PROTECTION
UNUSUAL

UNUSUAL
ESTROGEN PROTECTION

ESTROGEN PROTECTION
UNUSUAL

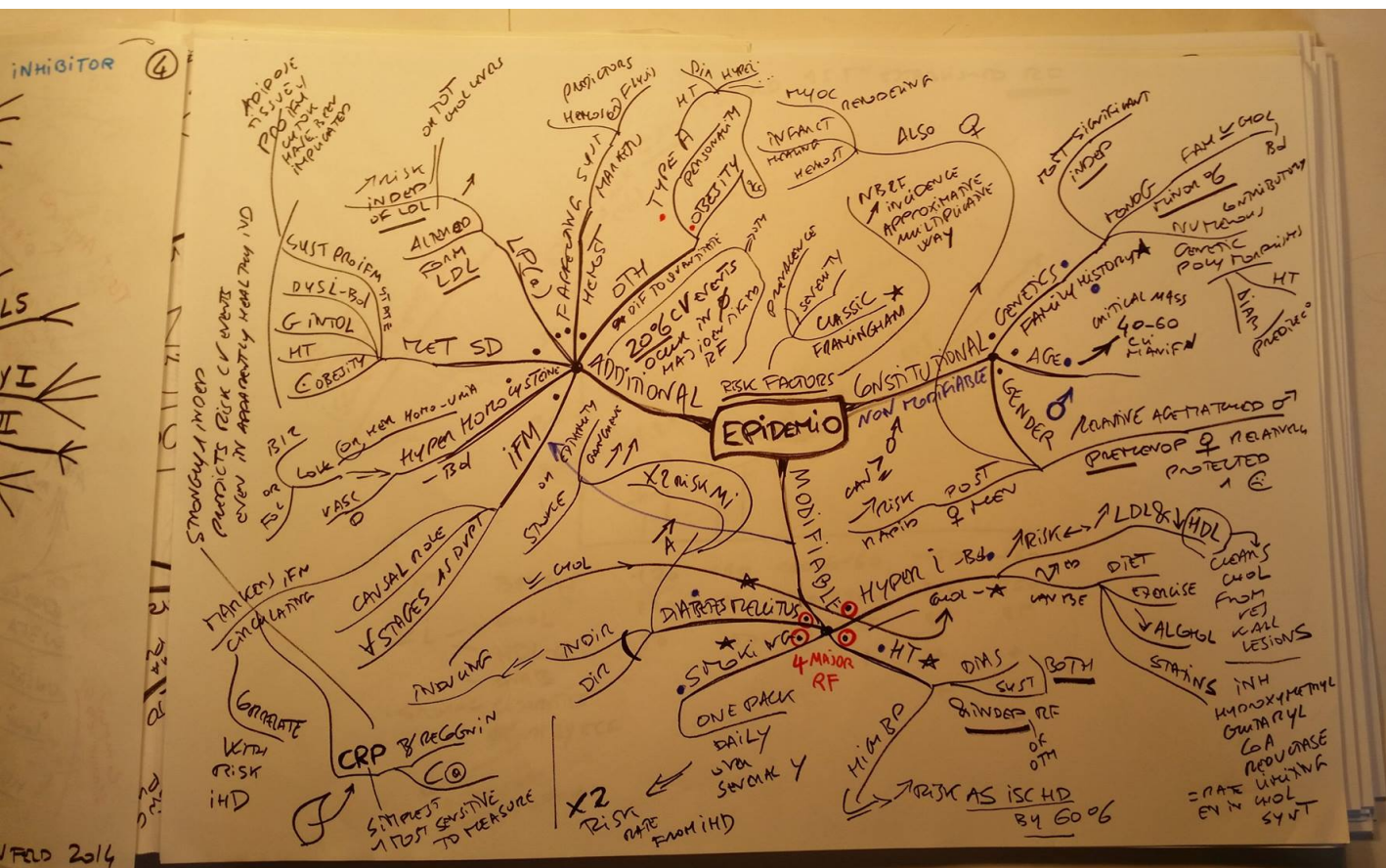
UNUSUAL
ESTROGEN PROTECTION

ESTROGEN PROTECTION
UNUSUAL

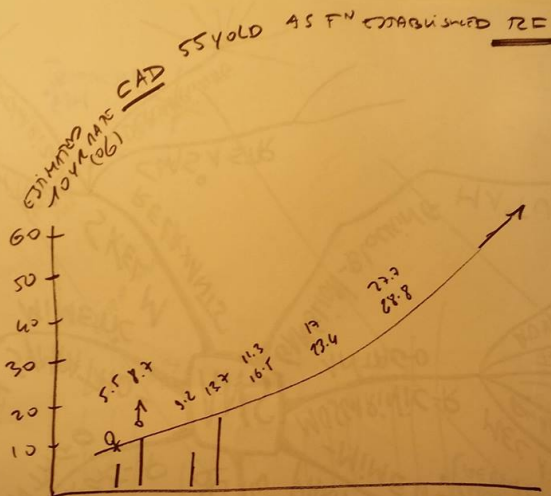
UNUSUAL
ESTROGEN PROTECTION

ESTROGEN PROTECTION
UNUSUAL

④



RF VS. ISCHEMIC HEART DISEASE

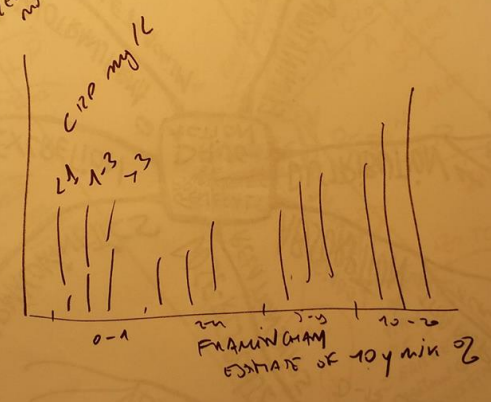


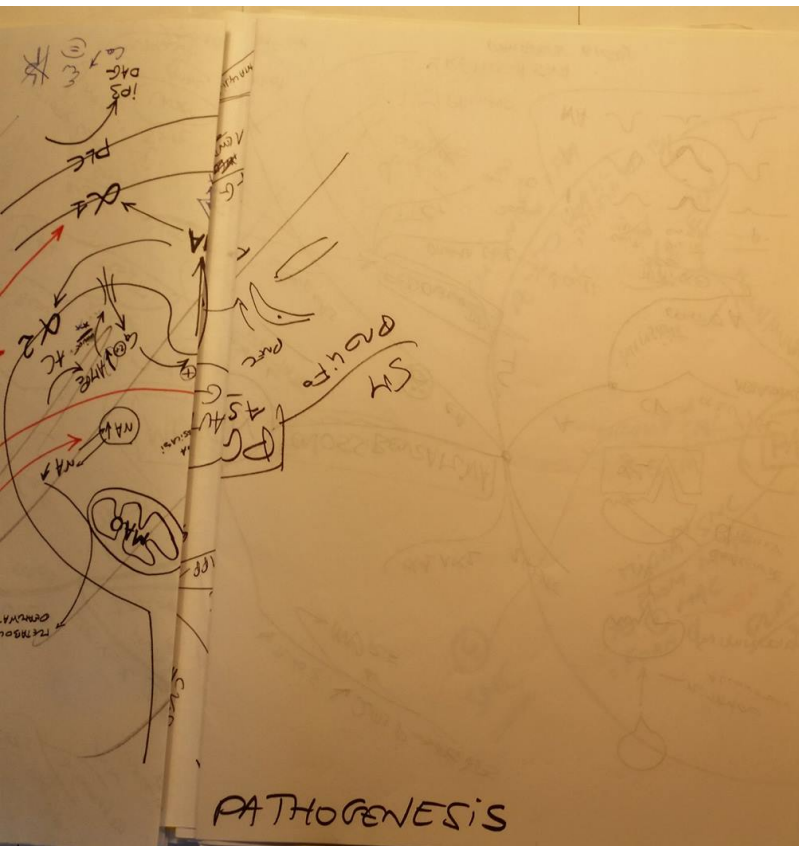
HT	BP	45	120	160	160	160	160	160
	CHOL		220	220	260	260	260	260
LDL	HDL-C		50	50	50	35	35	35
	- DIAB					+	+	+
	- SMOKE CIGARETTES						+	+
	- LVM BY ECG							+
	LEFT VENTRICULAR HYPERTROPHY							

Nicolaas Levy, NE
CHURCH

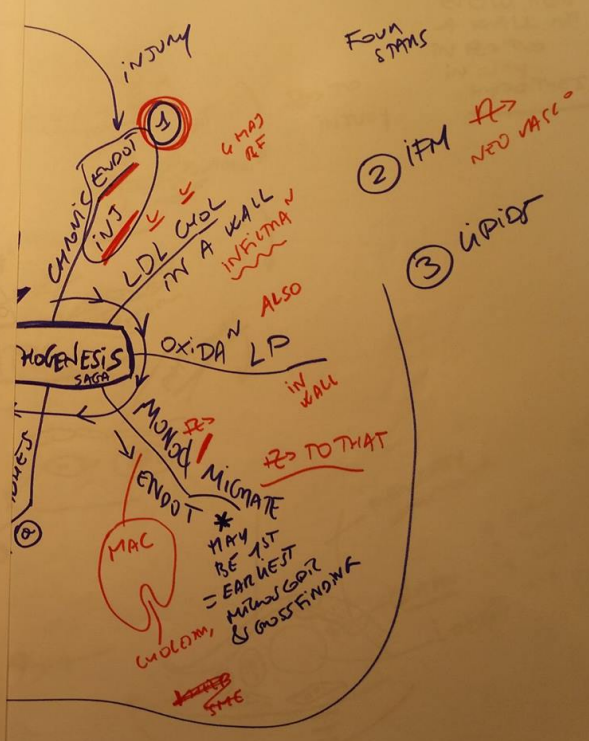
CRP
PROBOS
CV RISK

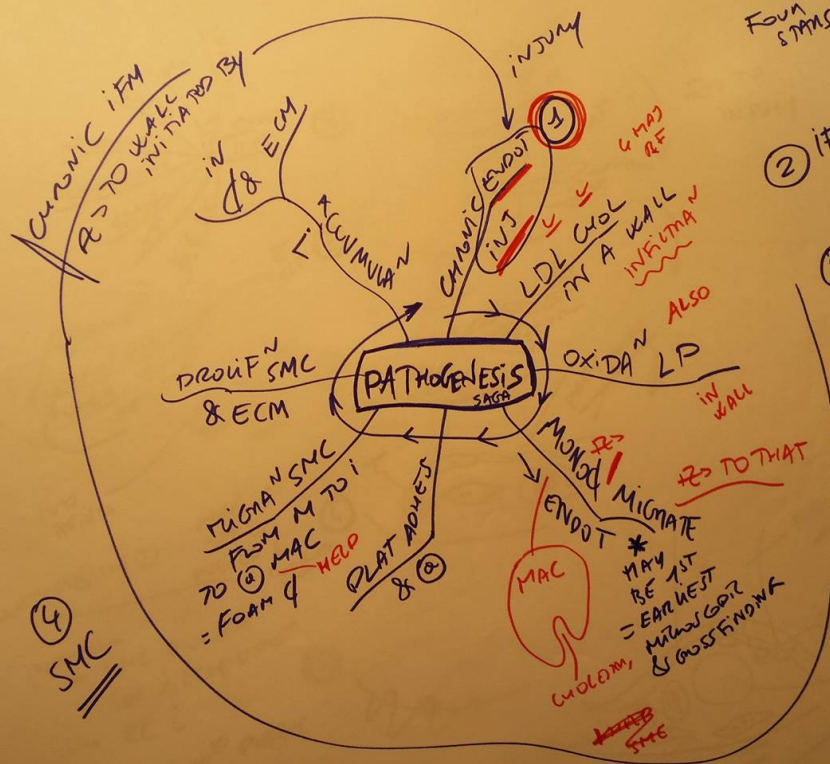
negative
w/ E.G. M.

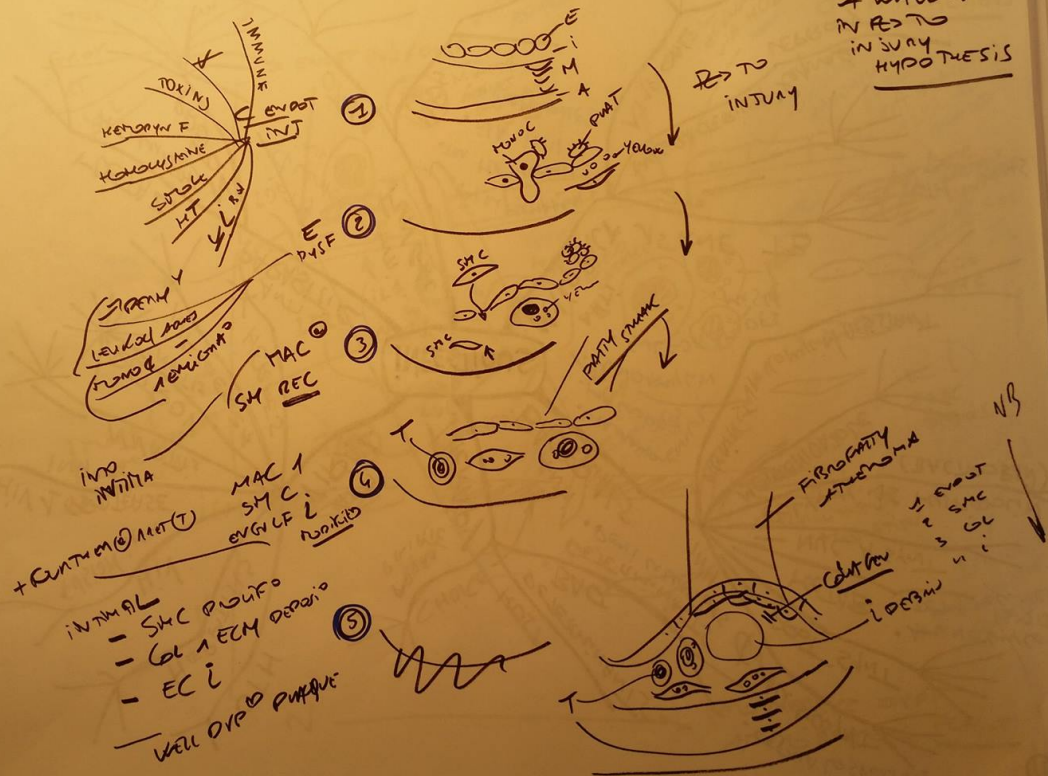




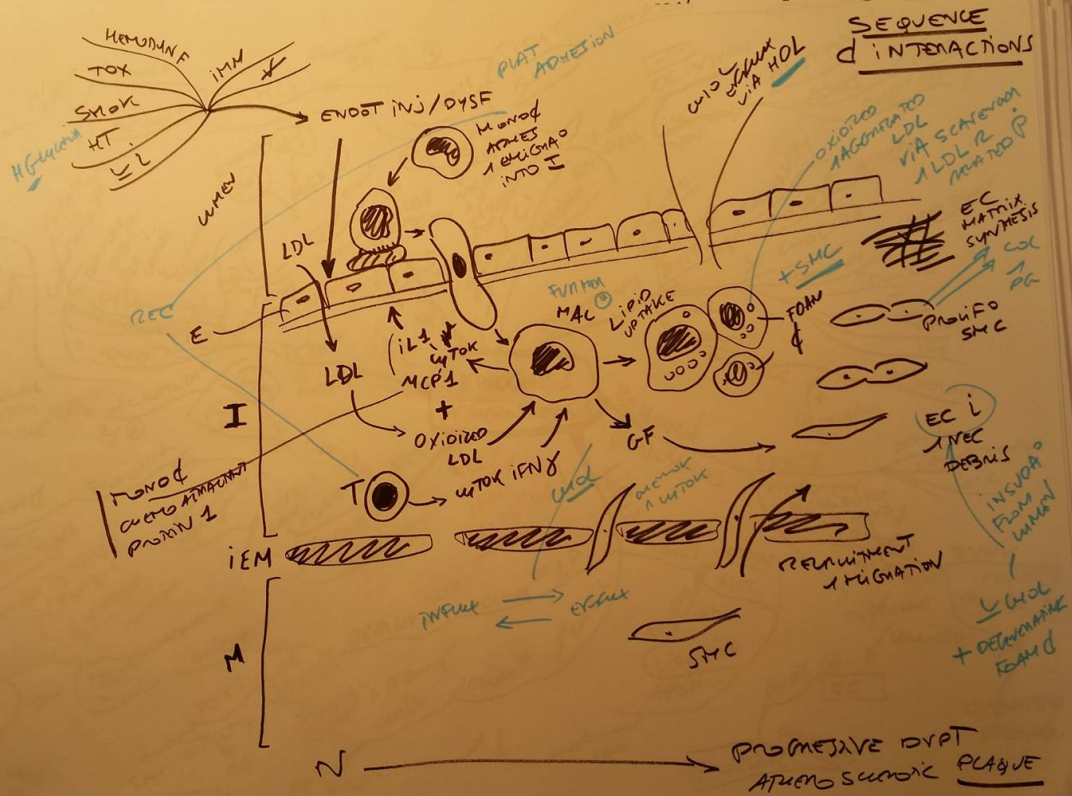
PATHOGENESIS

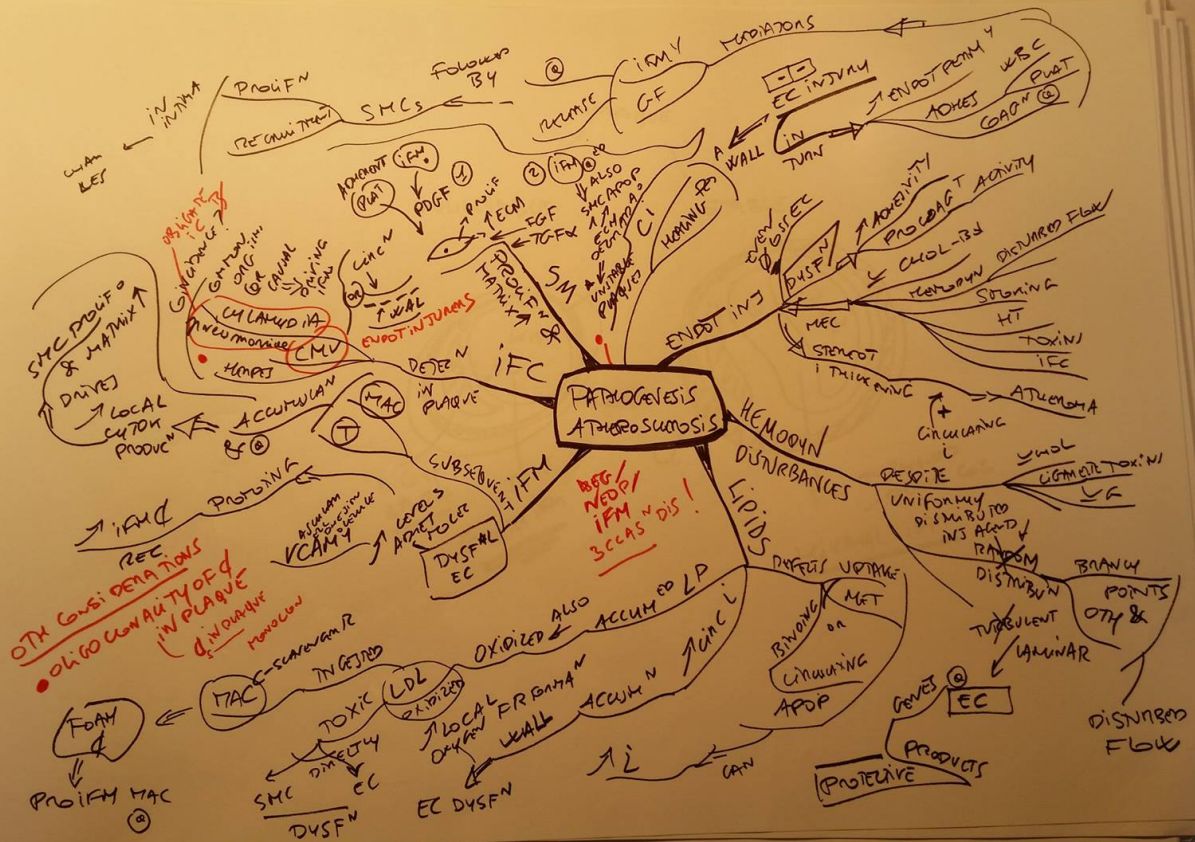






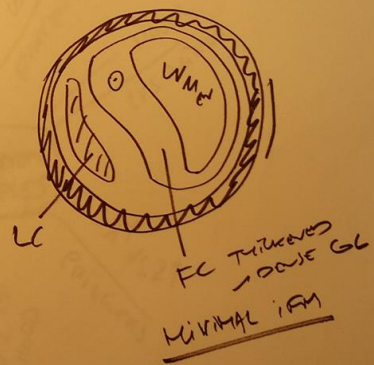
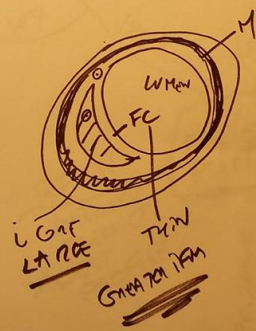
Handwritten notes on the left margin of the page, including "N! GASTRO" and "HLO".

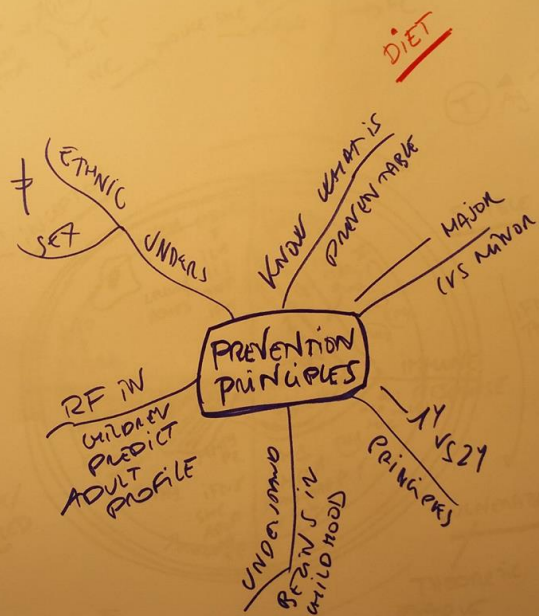




PLAQUE

VULNERABLE STABLE

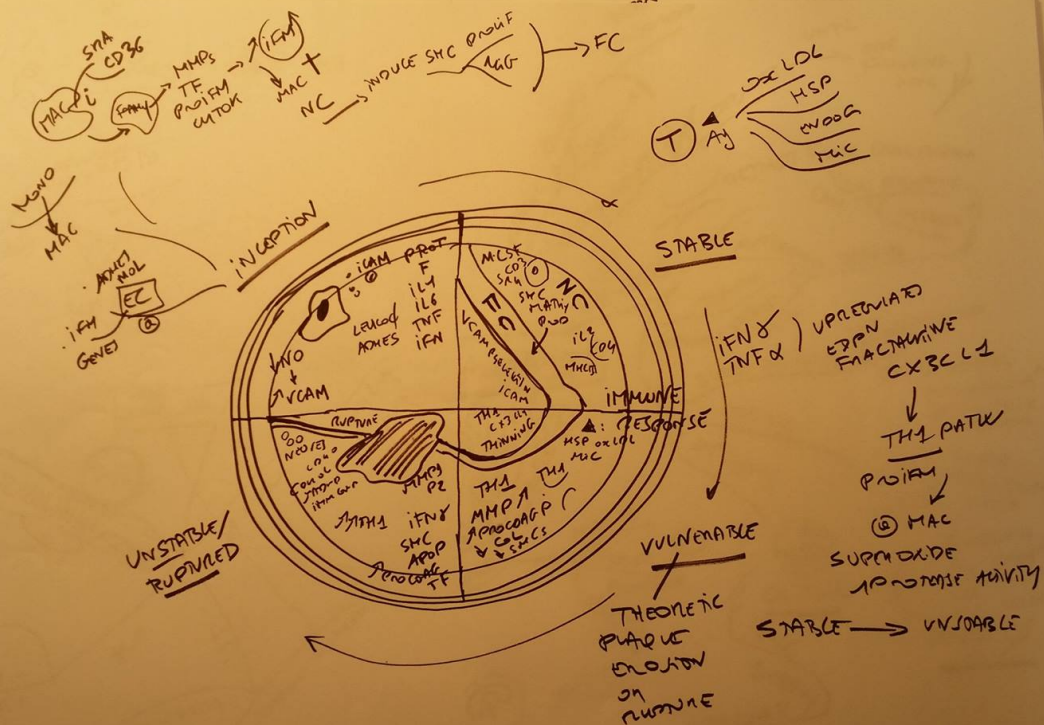


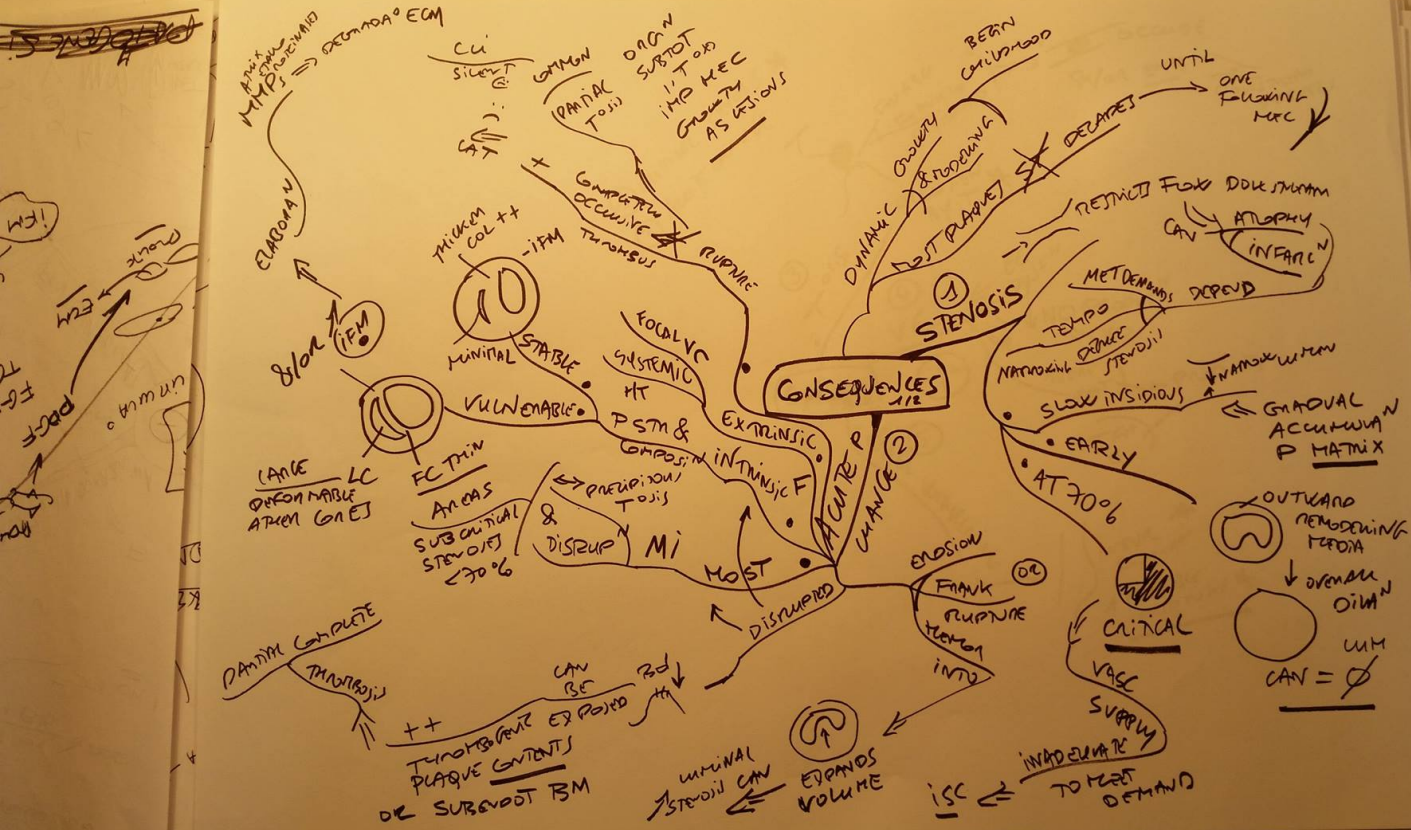


CAN BE REVERSED?

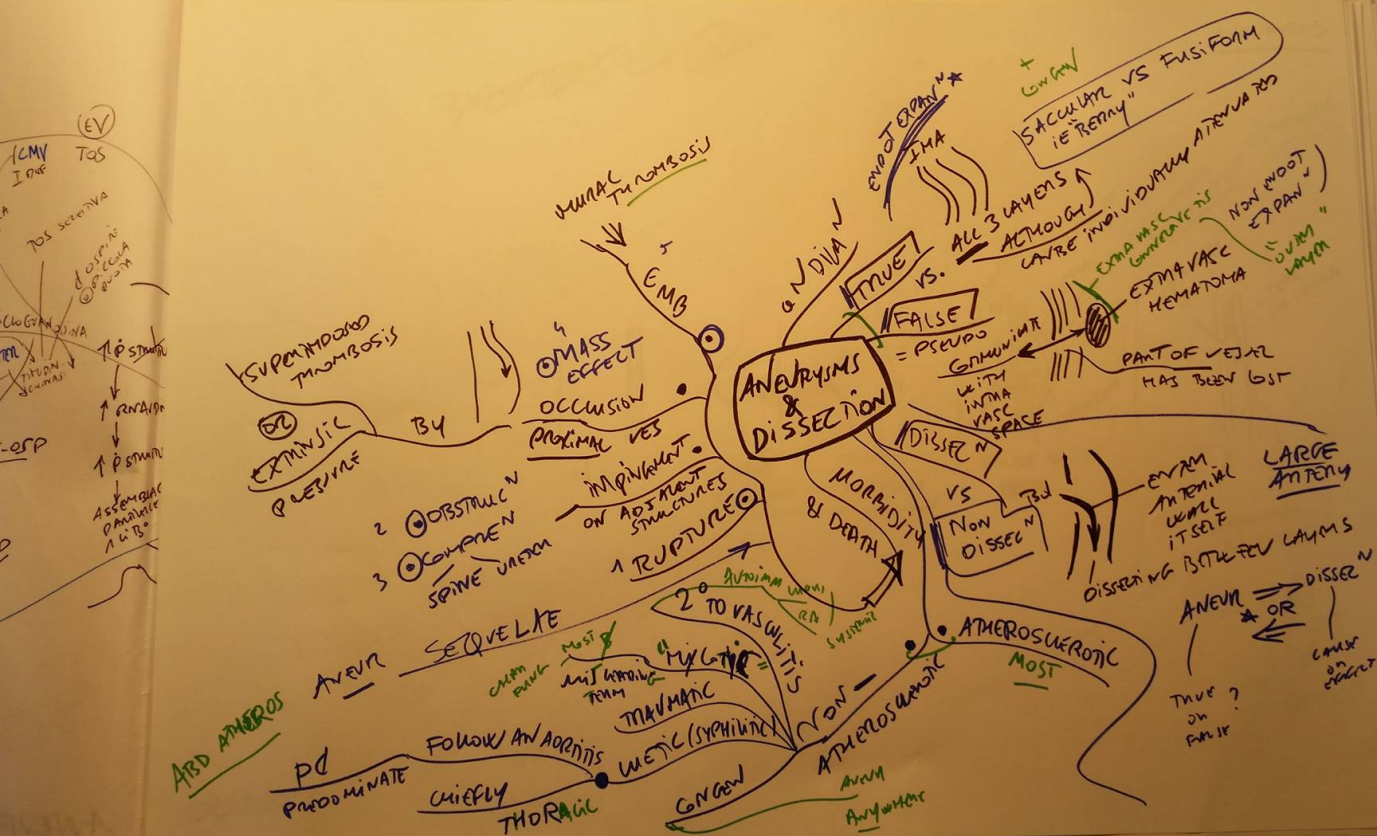
NO

BUT SLOWED DOWN









~~Stenosis~~

ANEURYSMS



2



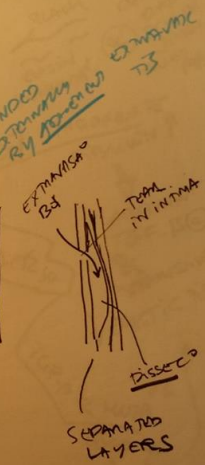
TRUE
SACCU



TRUE
FUSIFORM

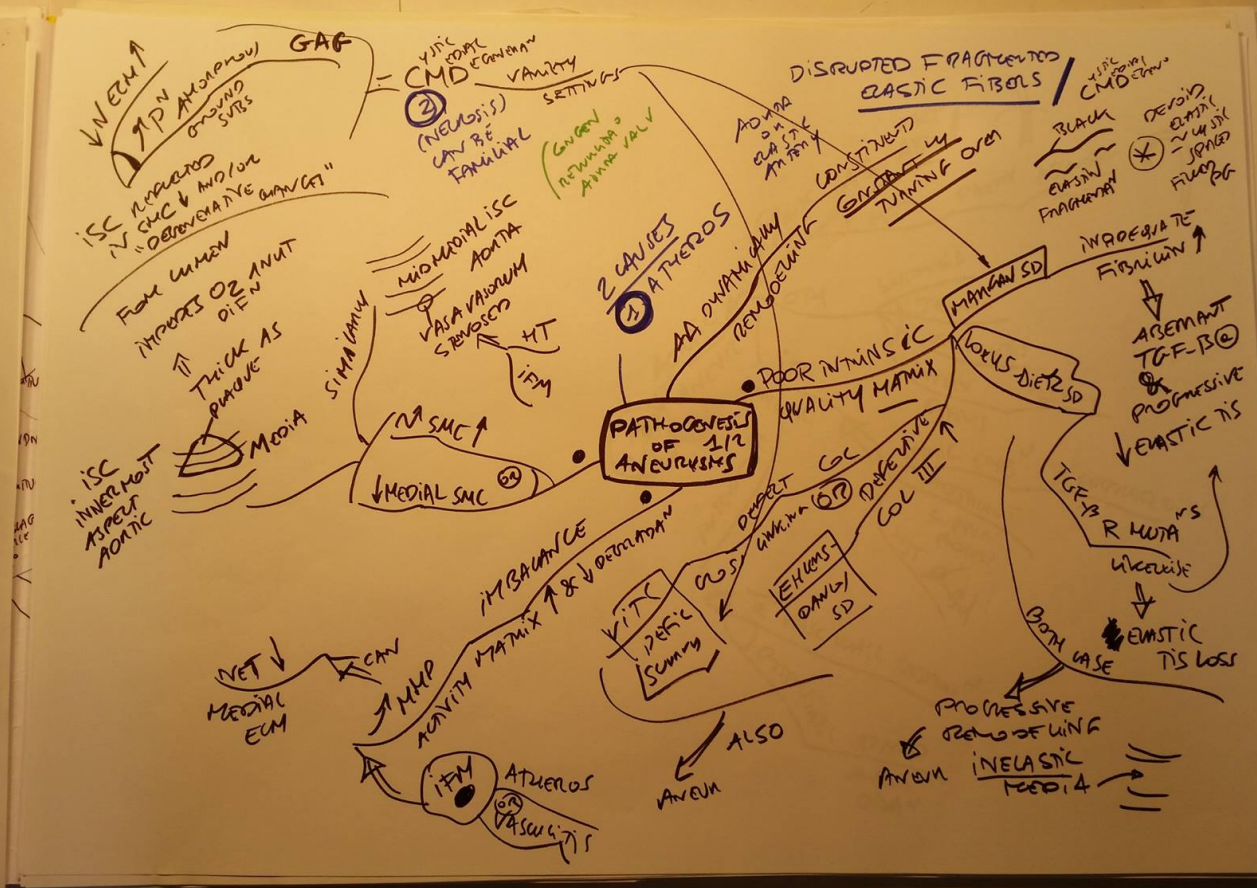


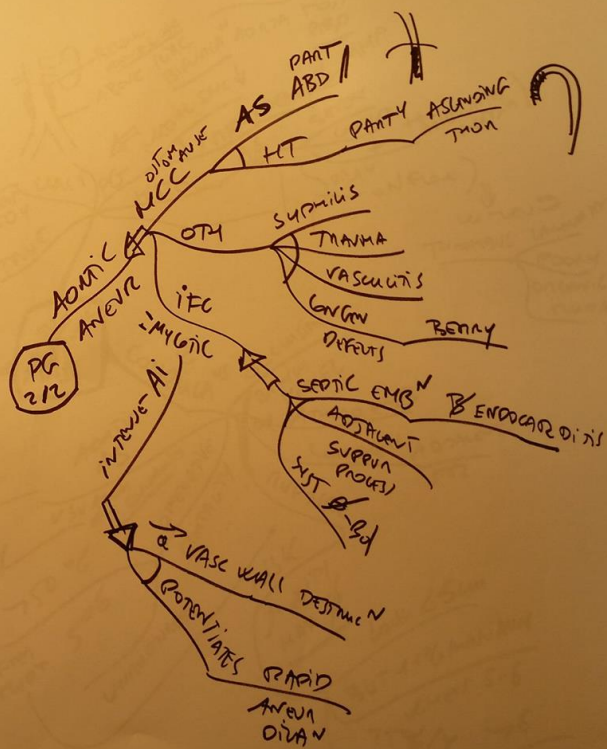
FALSE *

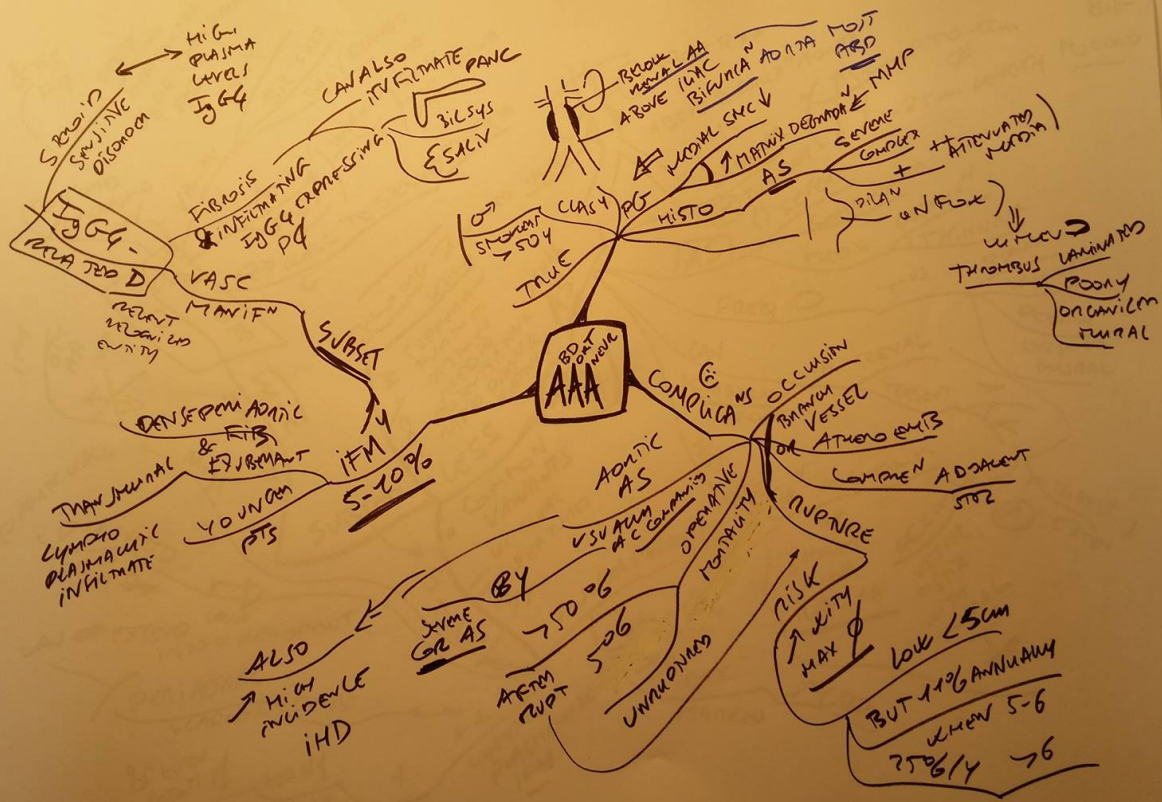


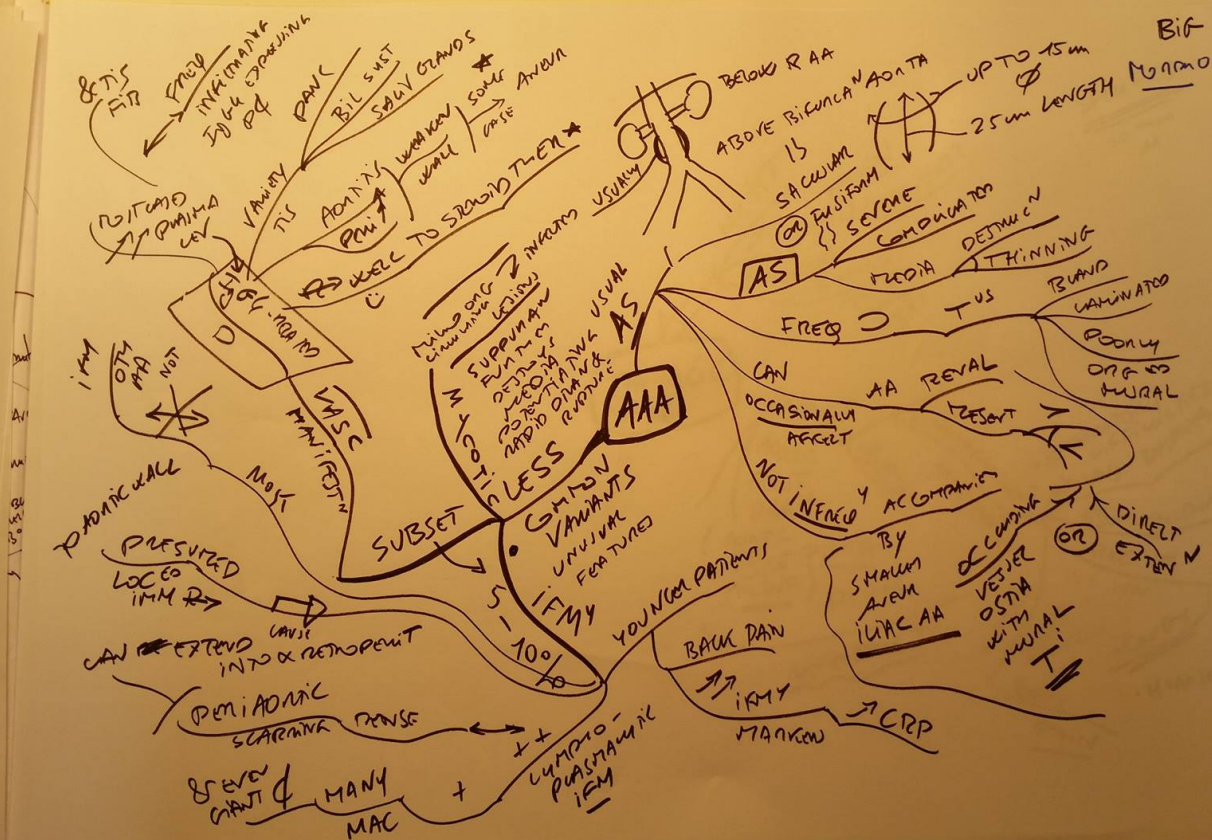
SEPARATED
LAYERS

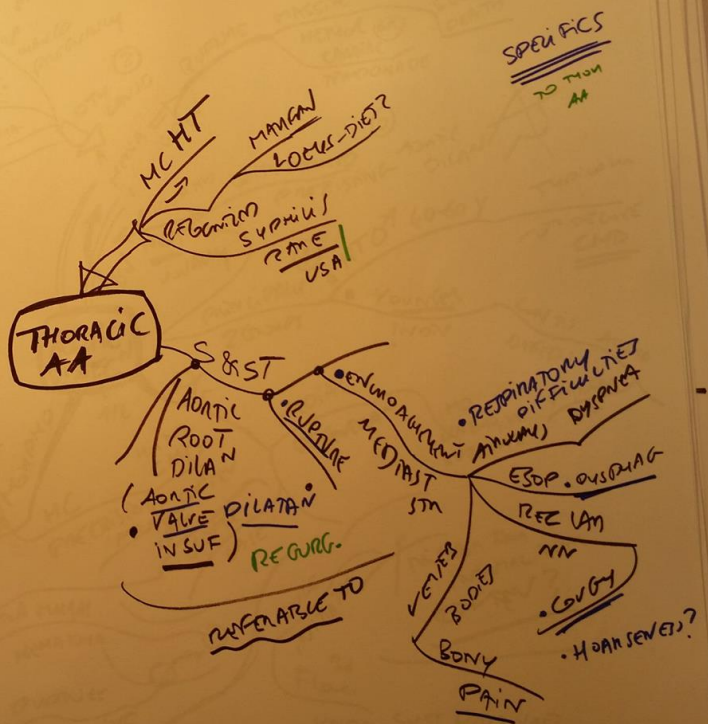
ALSO
PULSATE
VETRI
VALA
VASCORUM



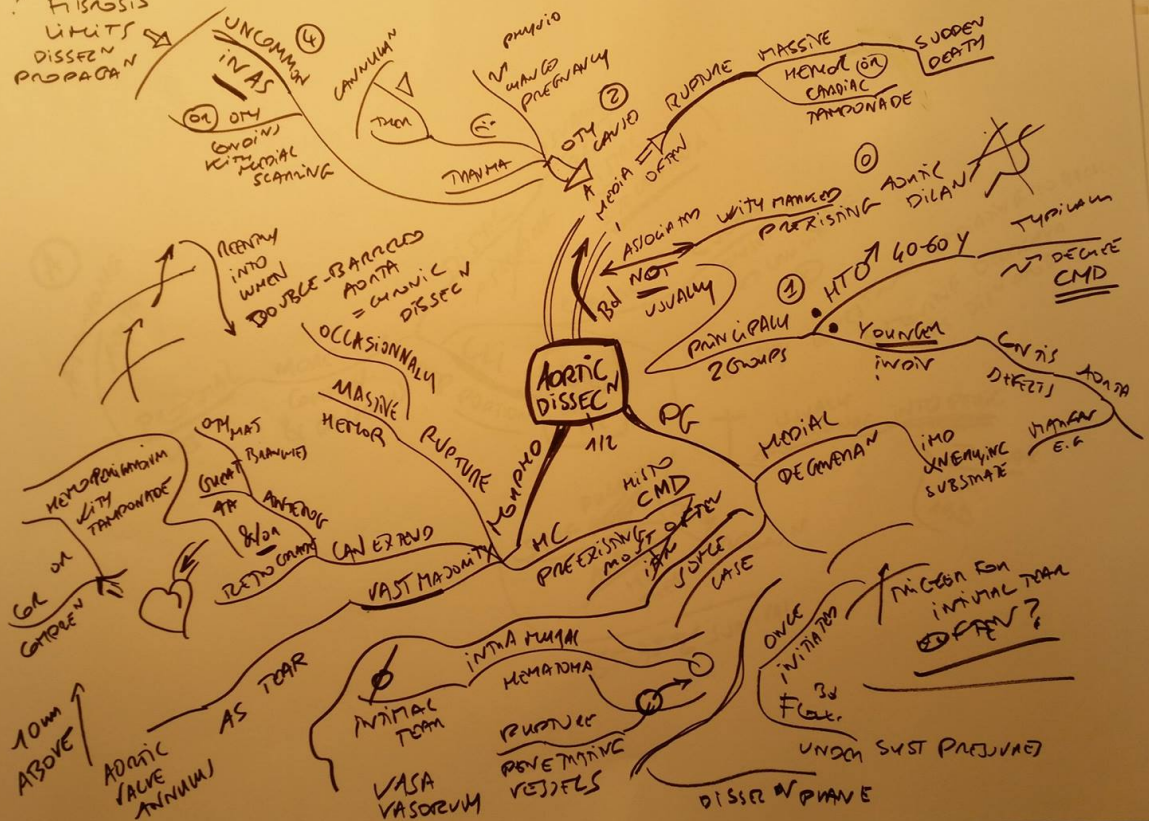


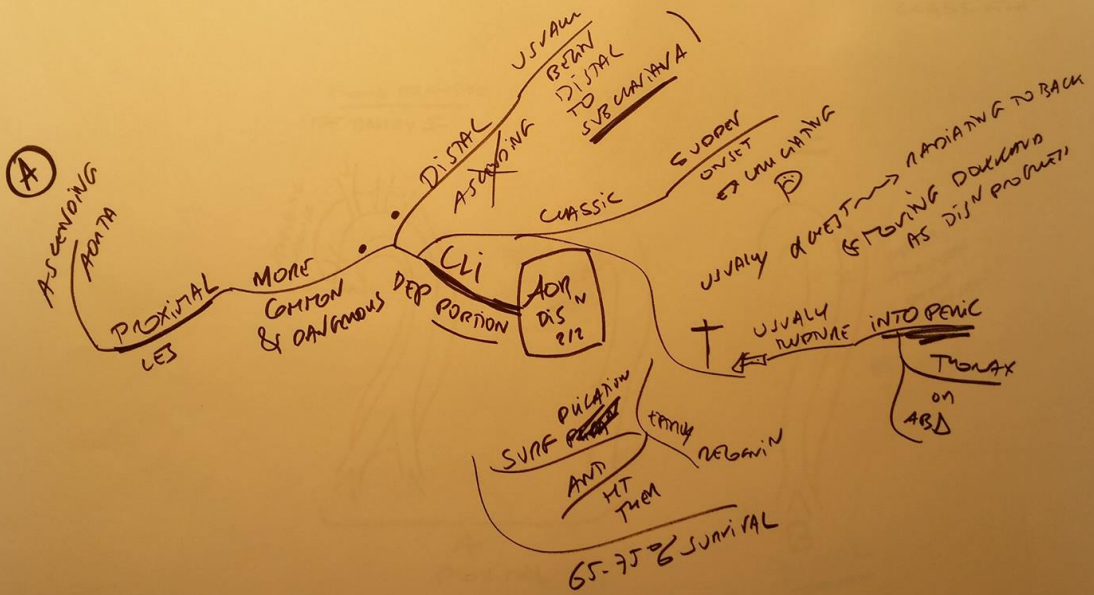






? FIBROSIS
LIMITS
DISSEMIN
PROPAGATION





~~BIOTOP~~
DISSE^o
CLASSIC^o

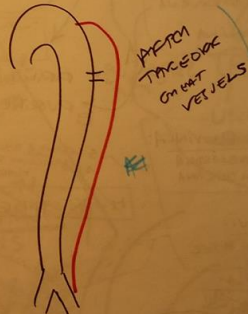
non EXTENSIVE
DE BAKEY I



IBOLA^o
II



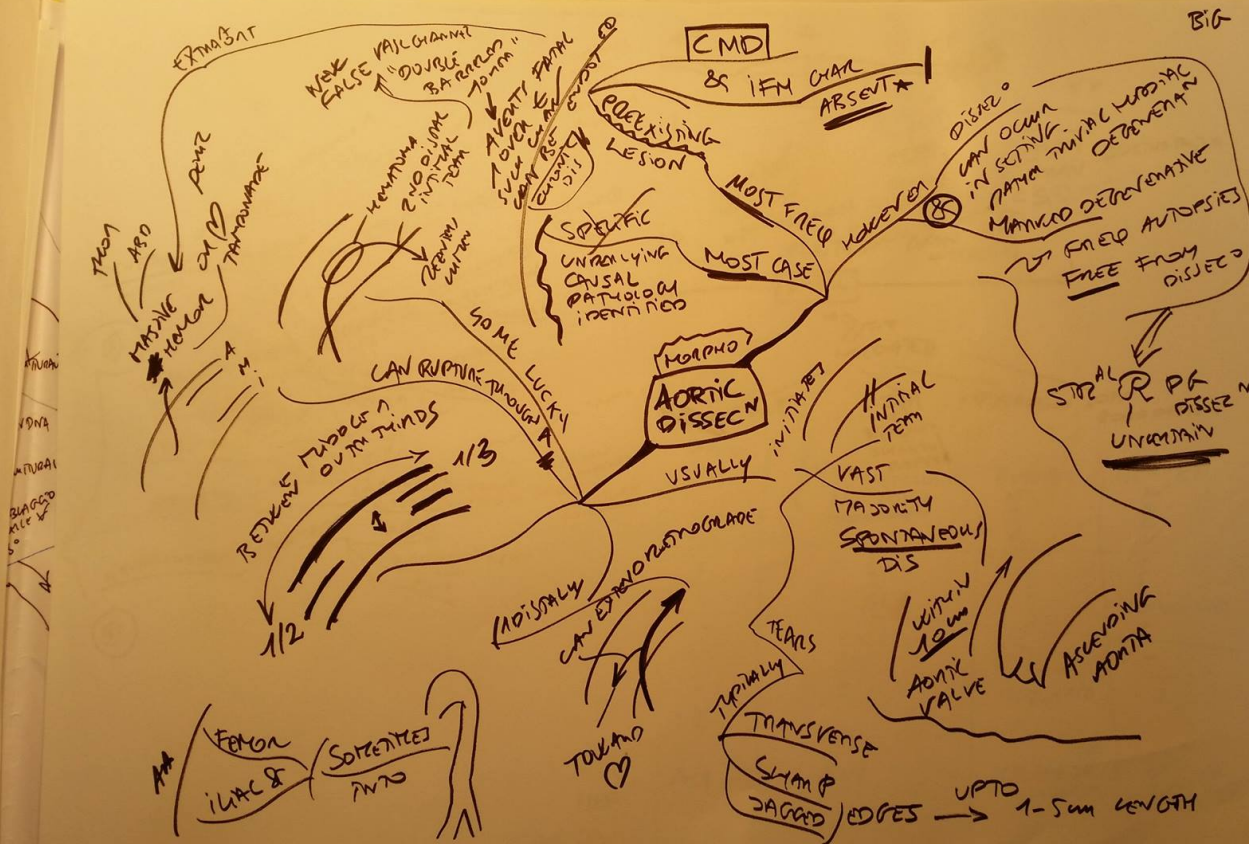
III



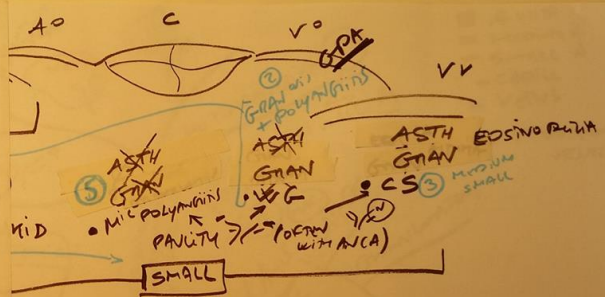
A
PROXIMAL

ROT SMOU
E 1 2 3
+4

B
DISTAL



ANS
SMA

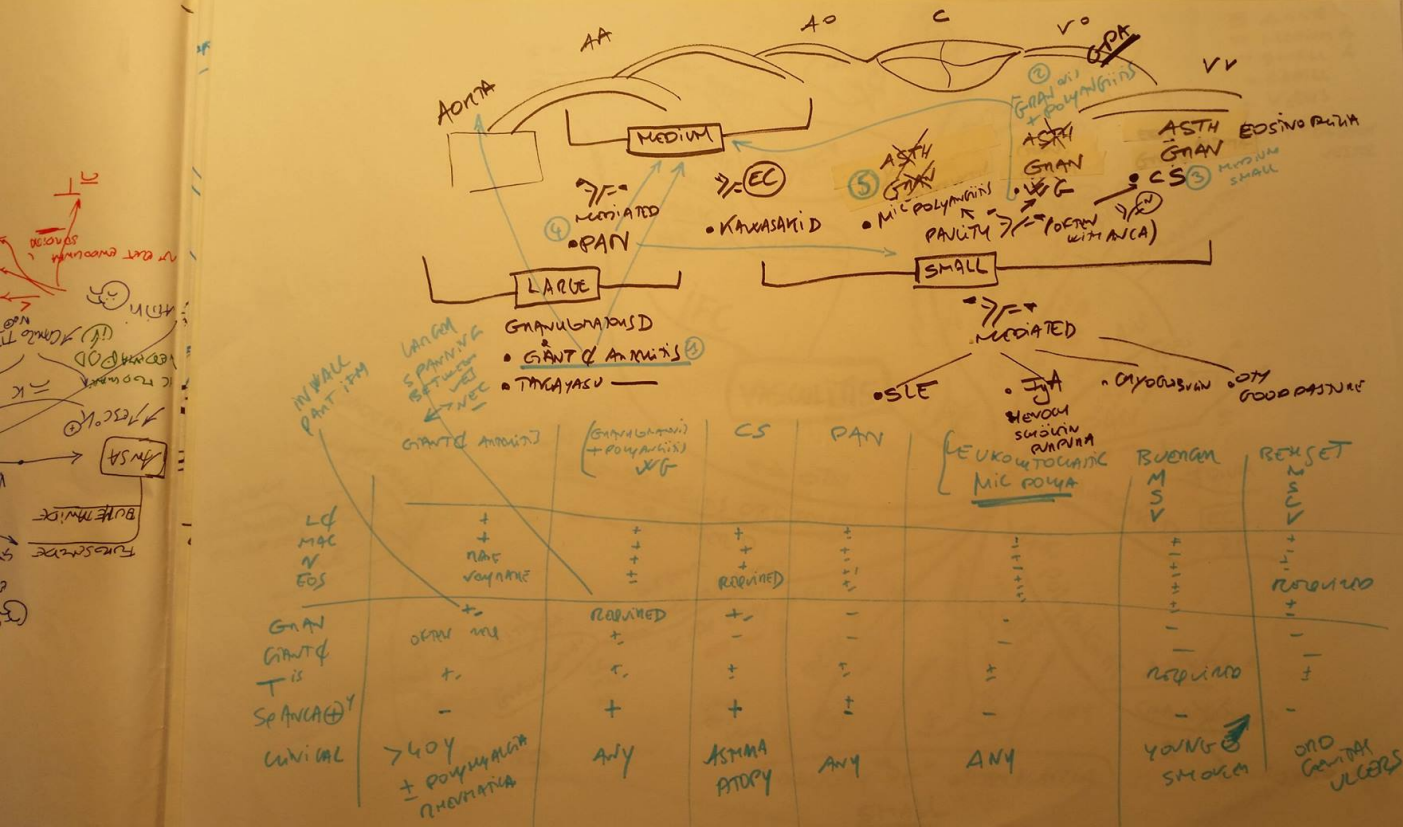


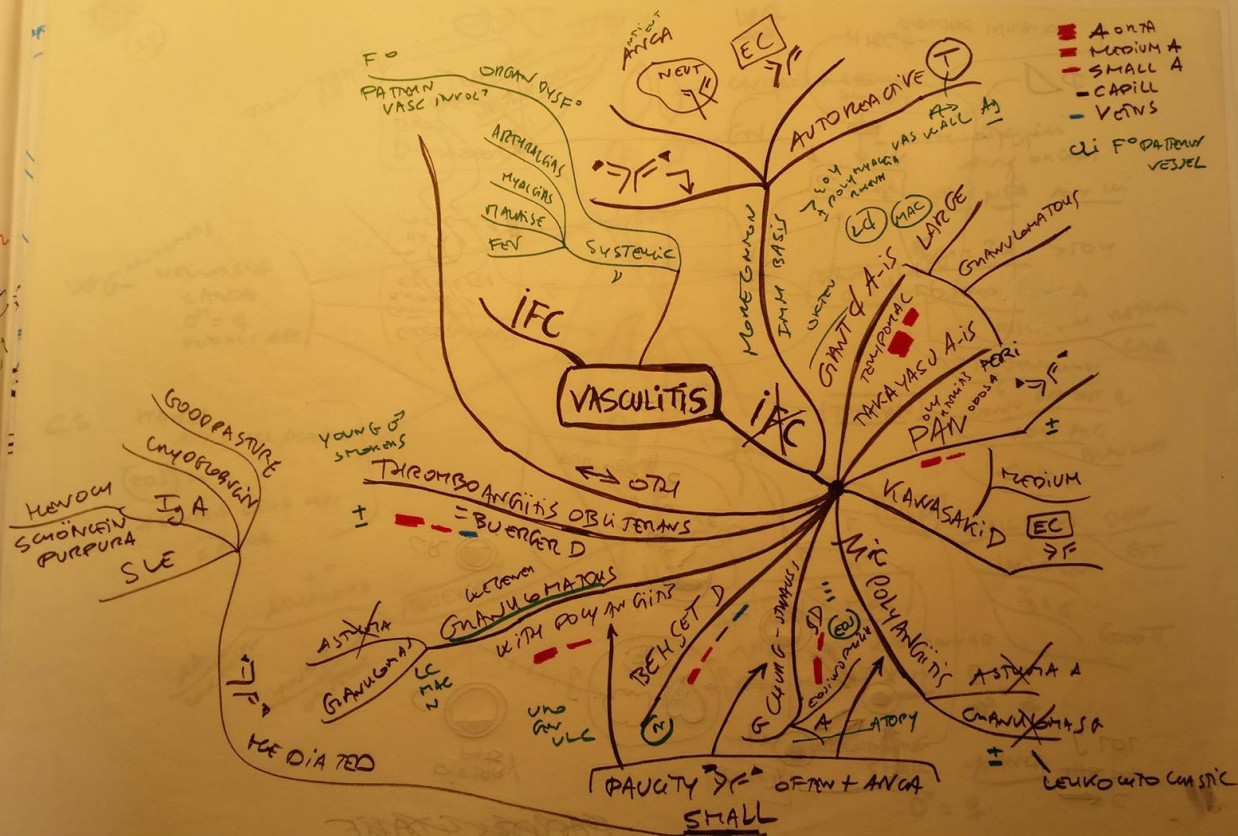
IMMEDIATE

- SLE
- JIA
- MYOSITIS
- GOOD PASTURE

PAN	LEUKOCYTIC MIC POLY	BUENAN MSV	RENET MSV
+	+	+	+
+	+	+	+
+	+	+	+
-	-	-	-
+	+	+	+
+	+	+	+
ANY	ANY	YOUNG SMOKER	OLD GOUTY ULCERS

VASCULITIS





52

Stiff nose



WG

- NUM STR UI
- ANY ON CAN
- PAN MPA ANY UI

WG ANOMALIS
NECROSIS
CANCA
OT = 8
MIDDLE AGE

CS RARE
ANY SMALL/NECROSIS
(EOS) +
ASTHMA LONG VES
CANCA

ADENOMA
YOUNG
STOM

BOVENOM



GRANT
G. A

$\frac{E}{G} = \frac{2}{1} > 50\%$
- ROMP BODY Δ
RISK DAM RESINAC

TAKAYASU

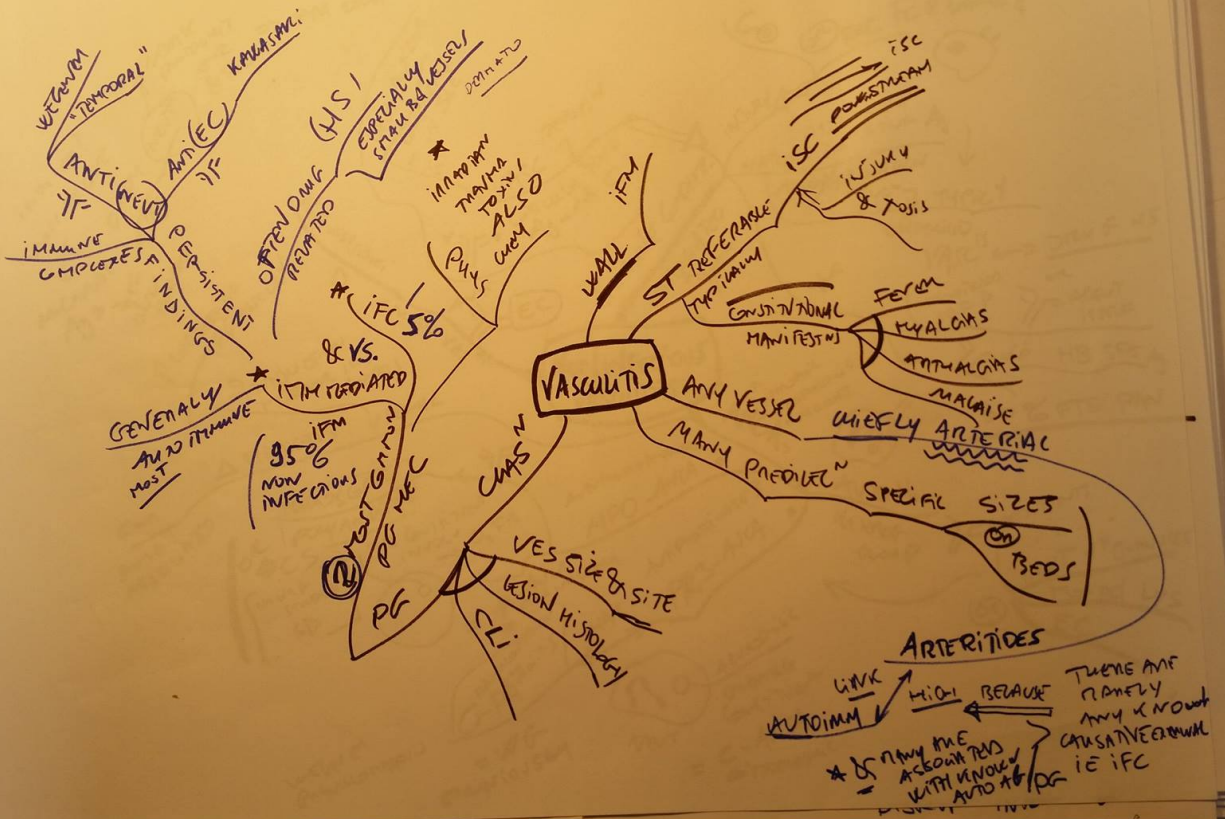
> 50% GRANULOMAS
YOUNG GON GAST G
ADMT ANC
BRANCHES

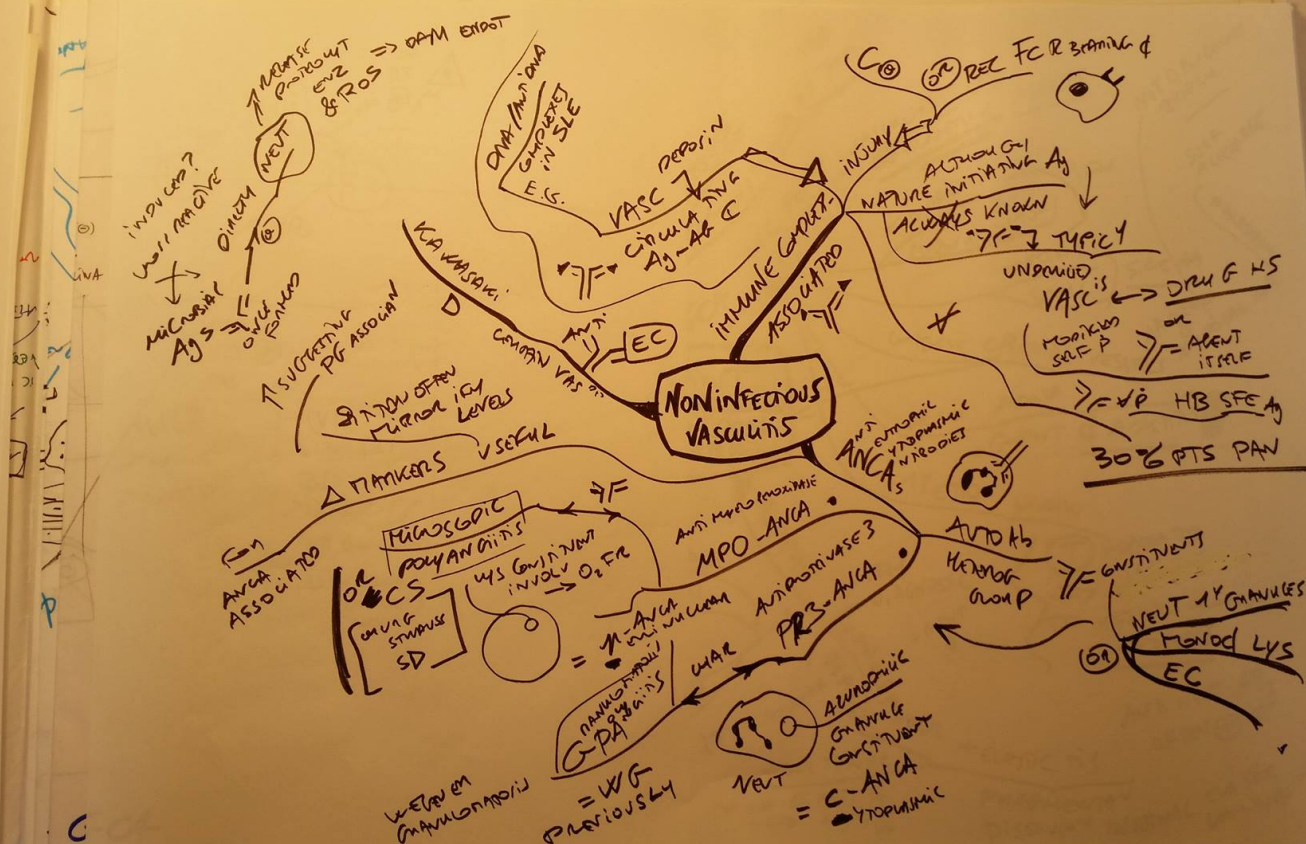
HSP

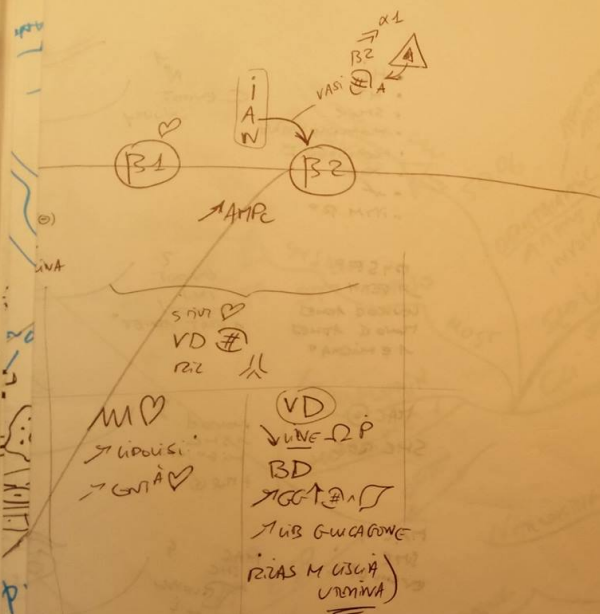
SHALL BONES SKIN
CHILDREN GUT
IAC
GOOD T

PAN 1 MPA

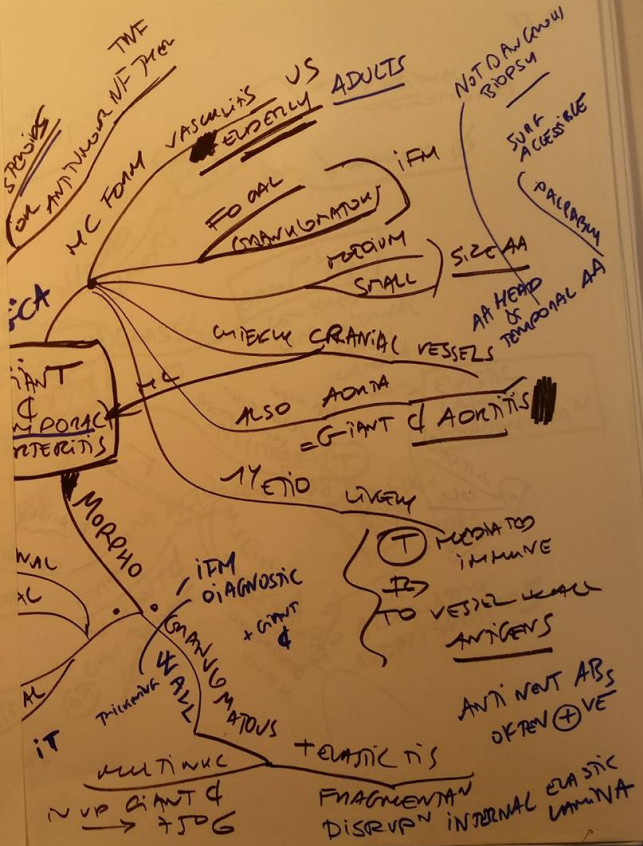
- VIT + DISO KIDNEY DAMAGE
- PAN MEDIUM 1 VV $\frac{Q}{G} = \frac{2}{1}$
- MPA NECROSIS
SHALL CANCA
OT = 8

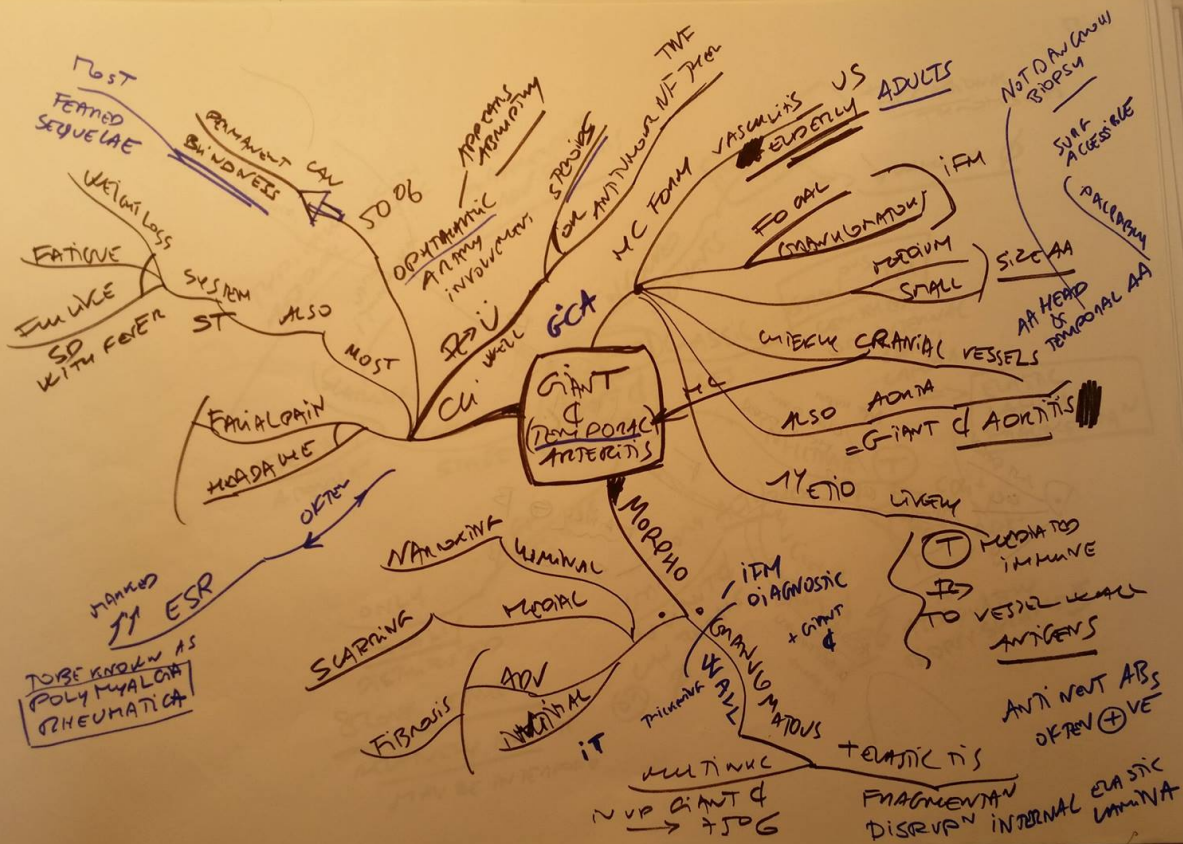




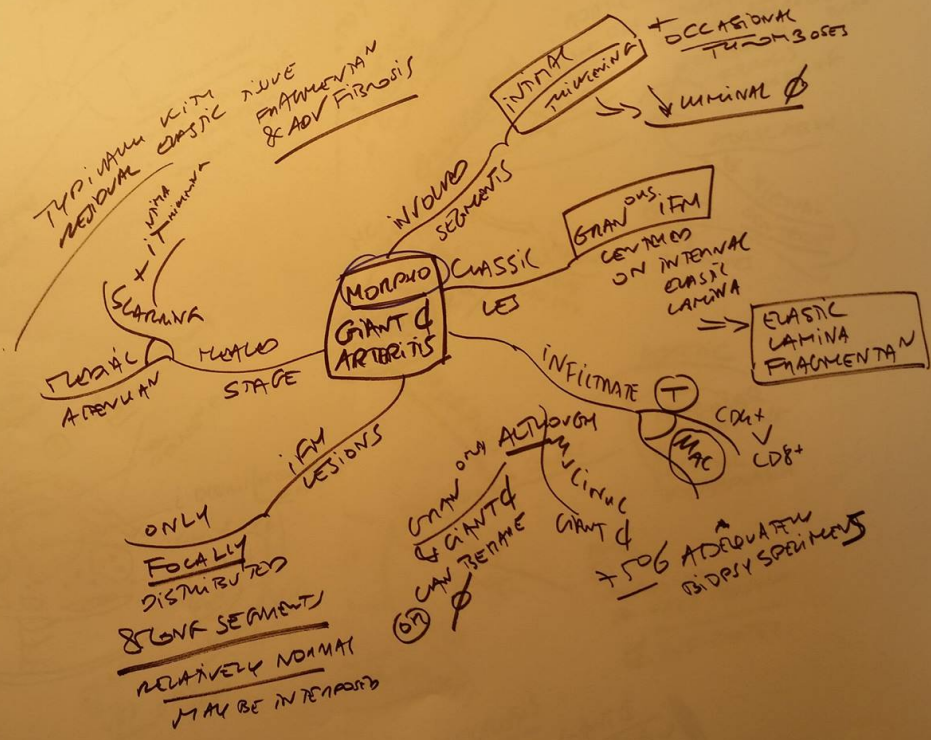


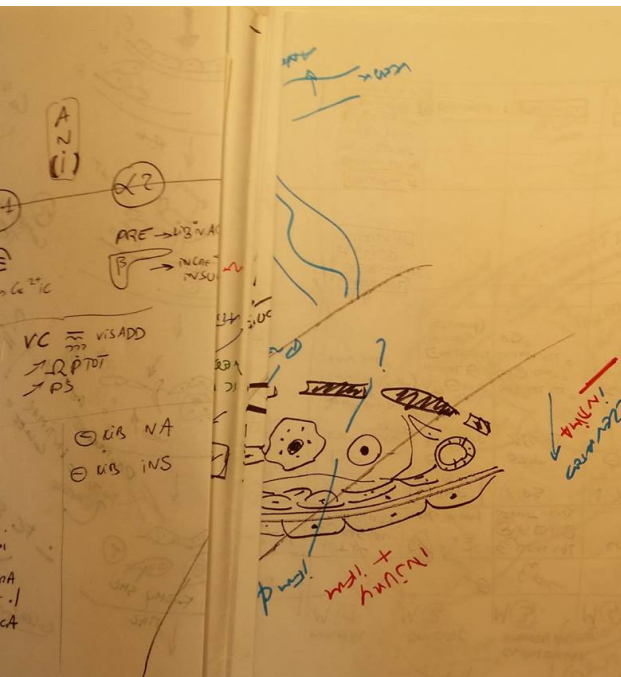
GCA



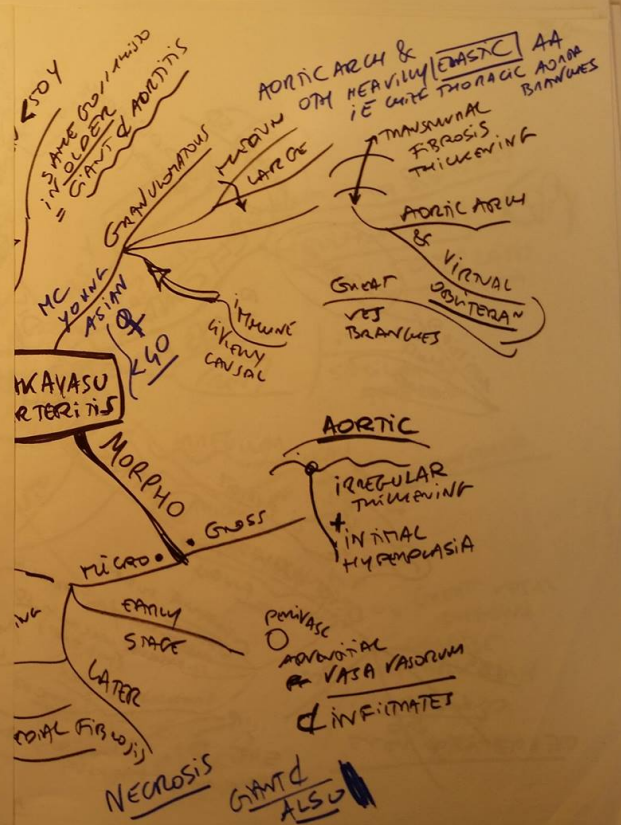


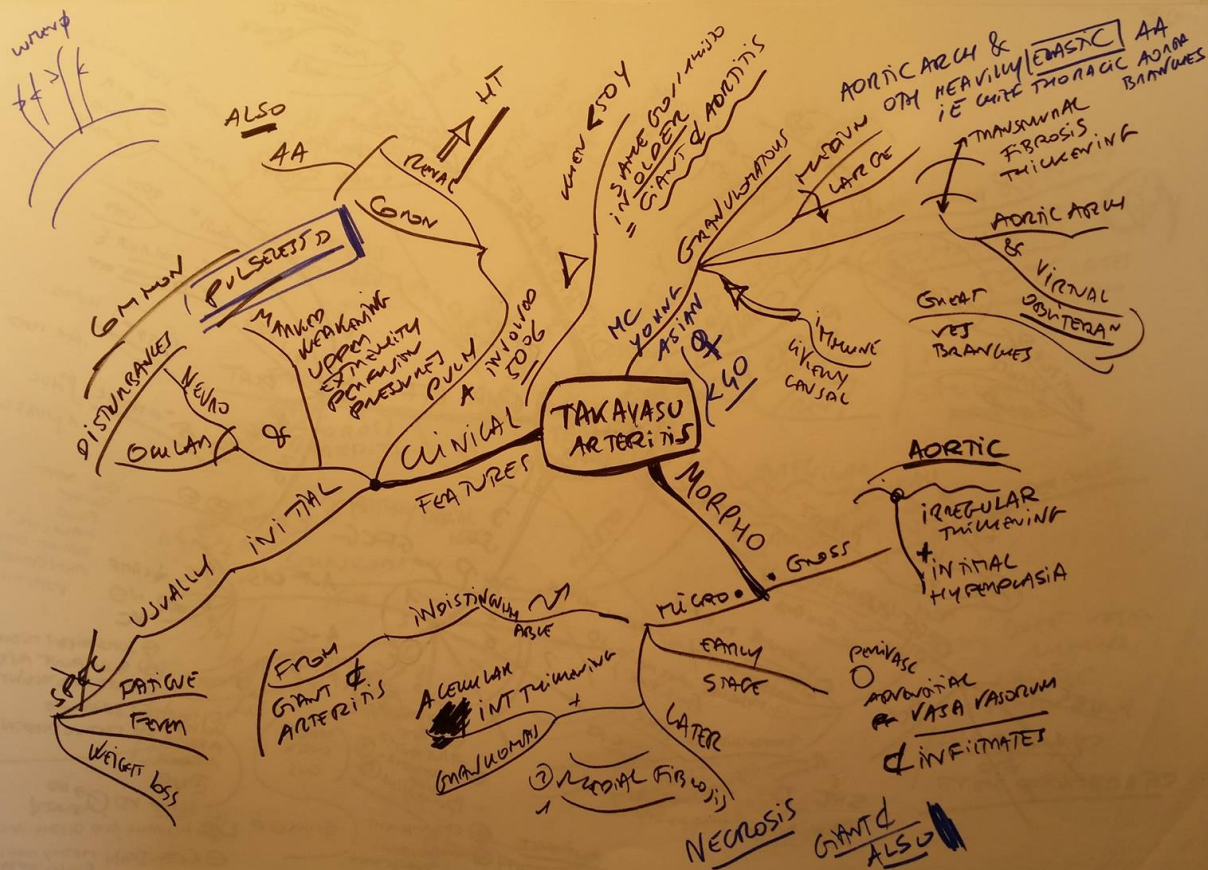
FIG

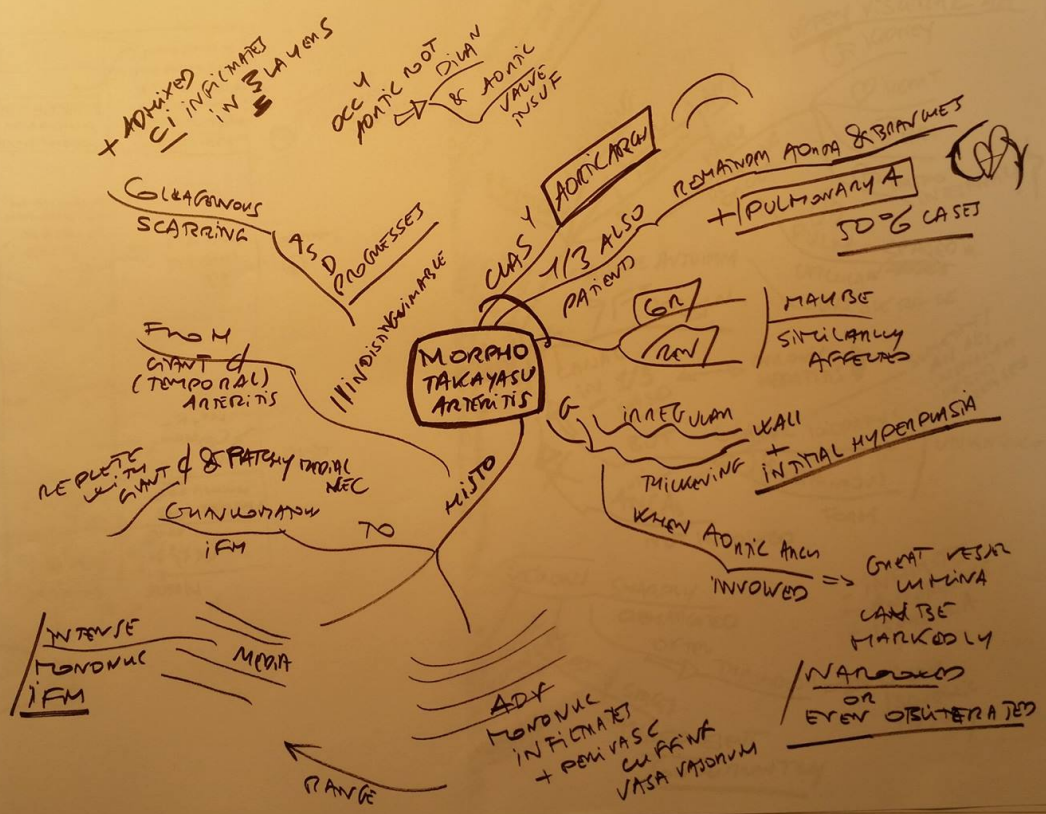




TAKAYASU ARTERITIS







PAN

Remission
90%
rate with
immunosup

Systemic
Neurologic
Small
Medium
Large
Vessels
ANY
FACIAL
DEFORMING
OROPH

Classical Autoimm
↓
F
↓
DEPOSITION

Often Visceral AA
KIDNEY
HEMT
LUNG
GI GASTRO
INTESTINAL
PULM
CIRCULAR
WIDE SPECTRA SS

CAVIAL
IN 1/3
CASES
BUT
CLASSIC IDIOPATHIC
(& UNKNOWN)
FORM
NOT INVOLVED

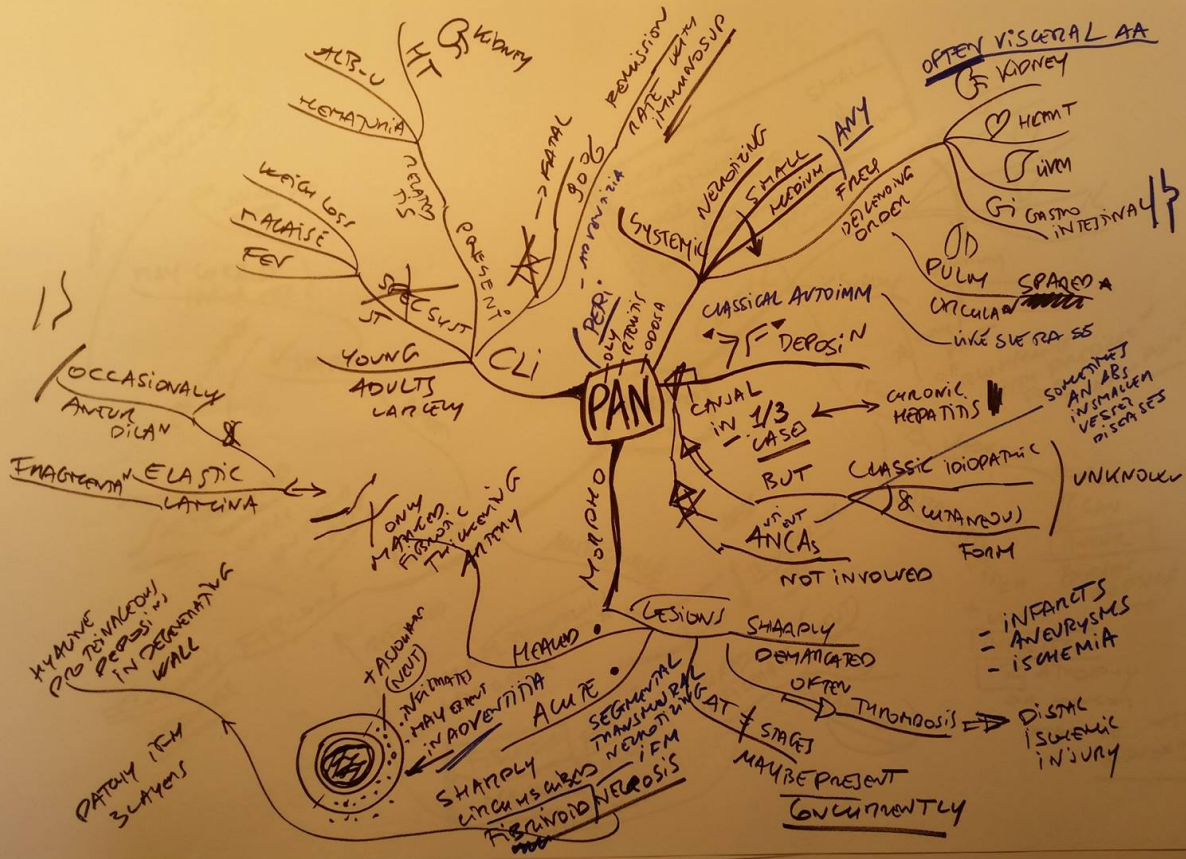
CHRONIC
HEPATITIS
SOMETIMES
AN ABS
IN SMALLER
VESSELS
IN SCALES

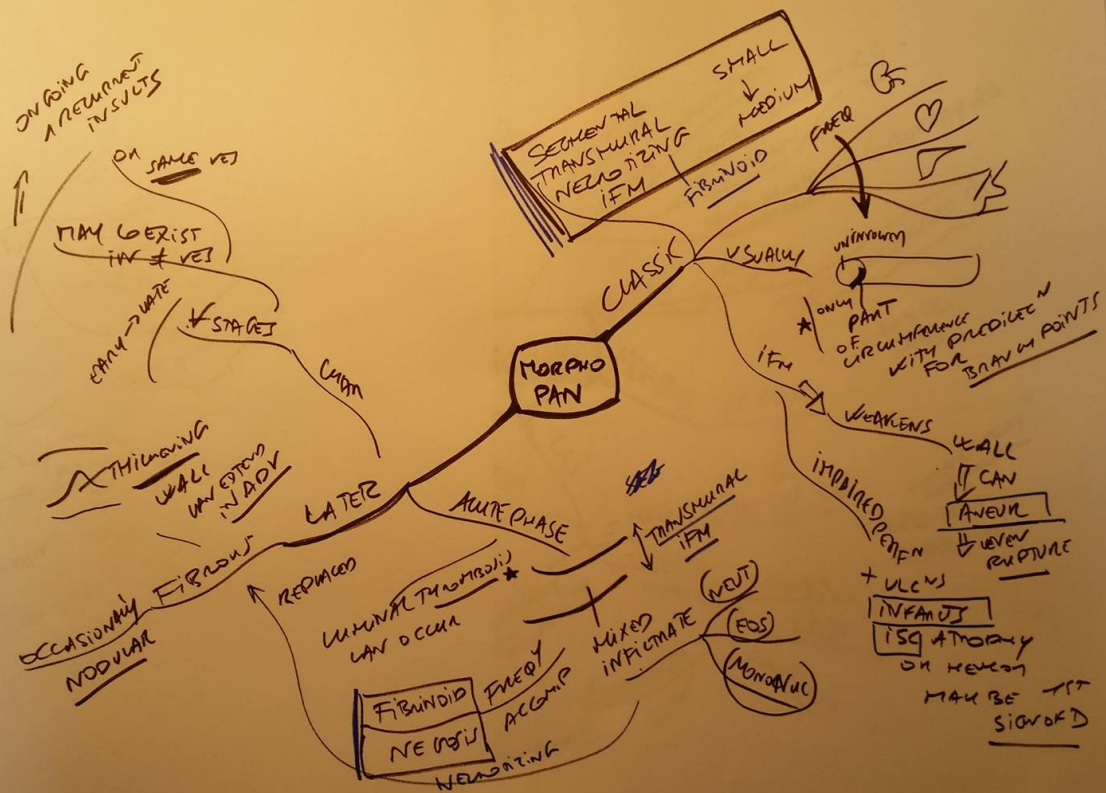
Lesions
SHARPLY
DEMYELINATED
OFTEN
THROMBOSIS
DISTAL
ISCHEMIC
INJURY

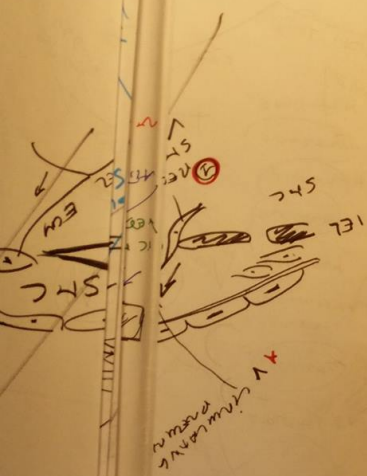
SEGMENTAL
TRANSVERSAL
NEUROPATHY
IFEM
NEUROPSIS

THROMBOSIS
MAY BE PRESENT
CONCURRENTLY

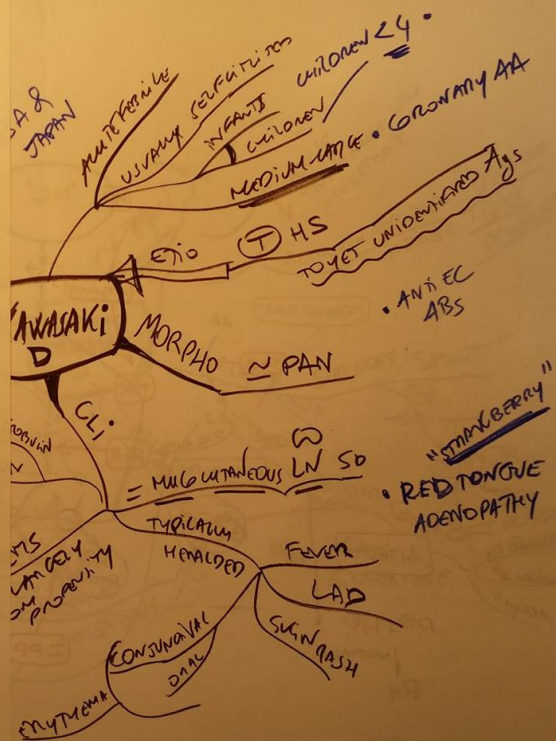
PAN



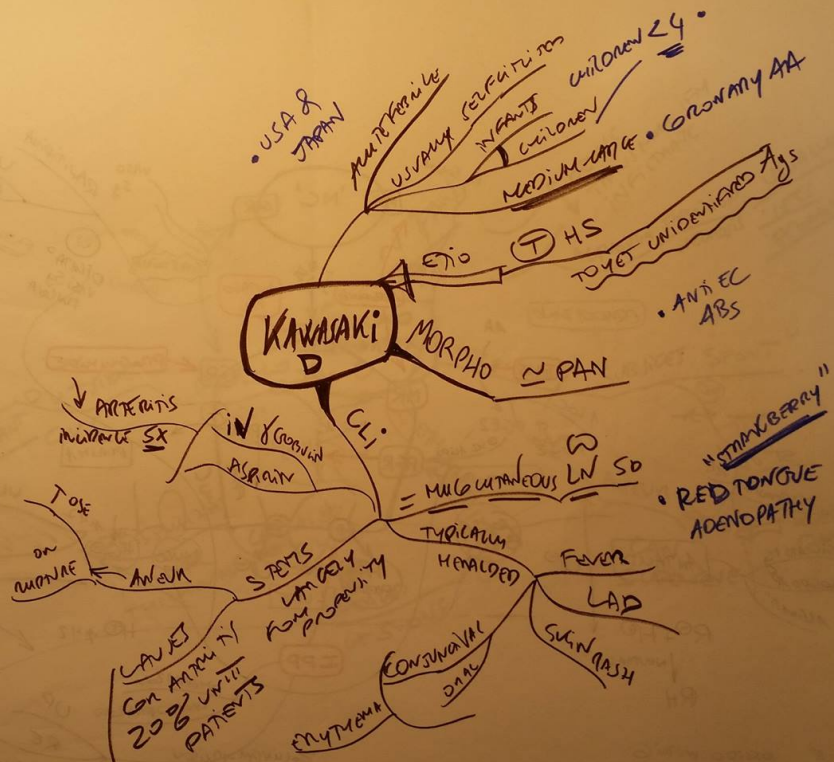




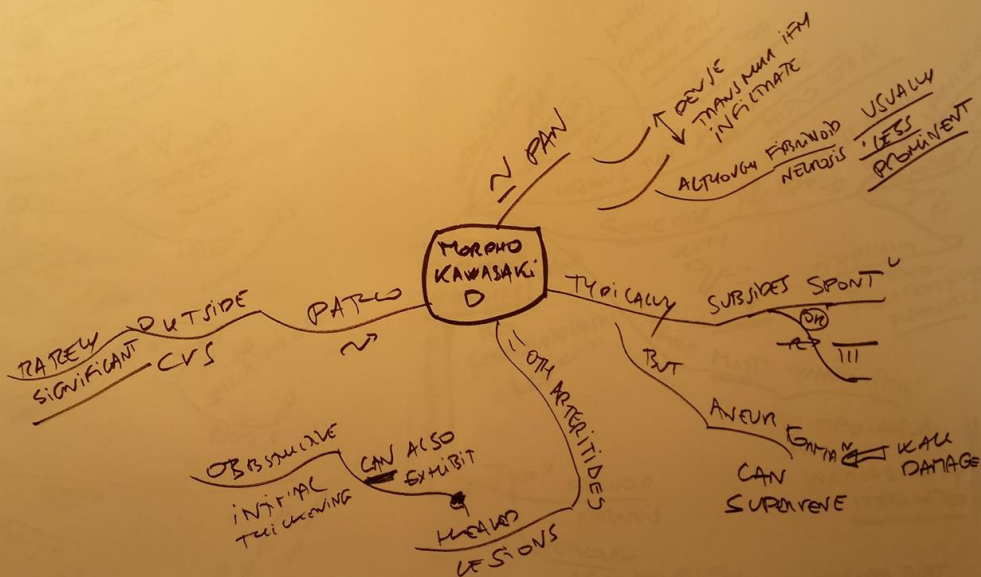
KAWASAKI D



• FATAL IN ONLY 1%
 • LEADING CAUSE OF
 ACQUIRED
 HEART DISEASE
 IN
 CHILDREN

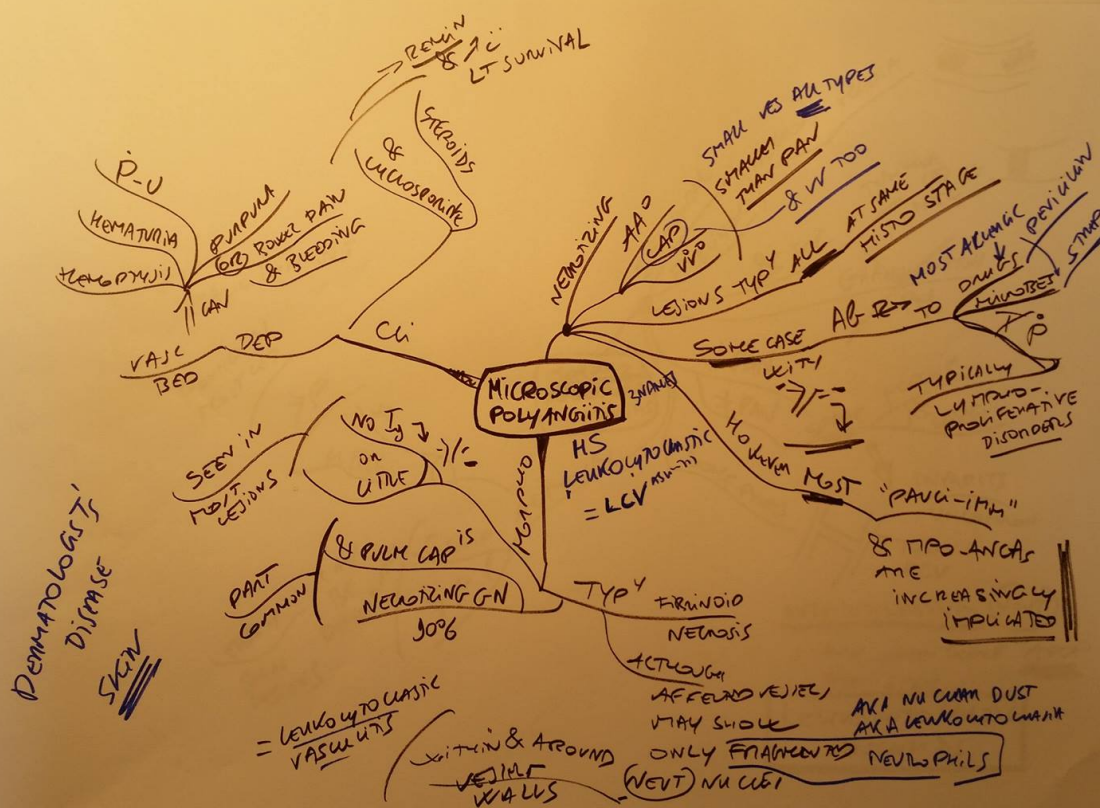


"STRAWBERRY"
 RED TONGUE
 ADENOPATHY



Non-rot
 Lateral flow
 CF
 VEGF

[illegible]



"PAUCIUM IN"

FOUND IN
POST BOX

75

no

little

EARLY SKIN LESIONS CAN BE DENSITOMETRIC

CAN
BE
DEPOSITED

Comp
711

Although

MORPHO
Microscopic
polyangia

SEMENAL
FIBRIN

FIBRINOID

8 fol

PAN

PAN SP

John Ann

Answers

[illegible]

LARGE

IN KARET

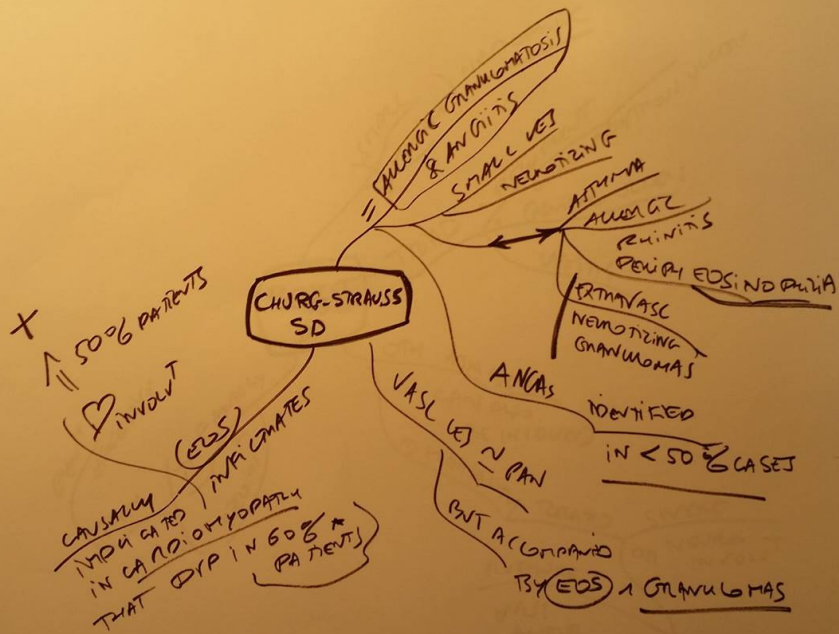
UNCOM

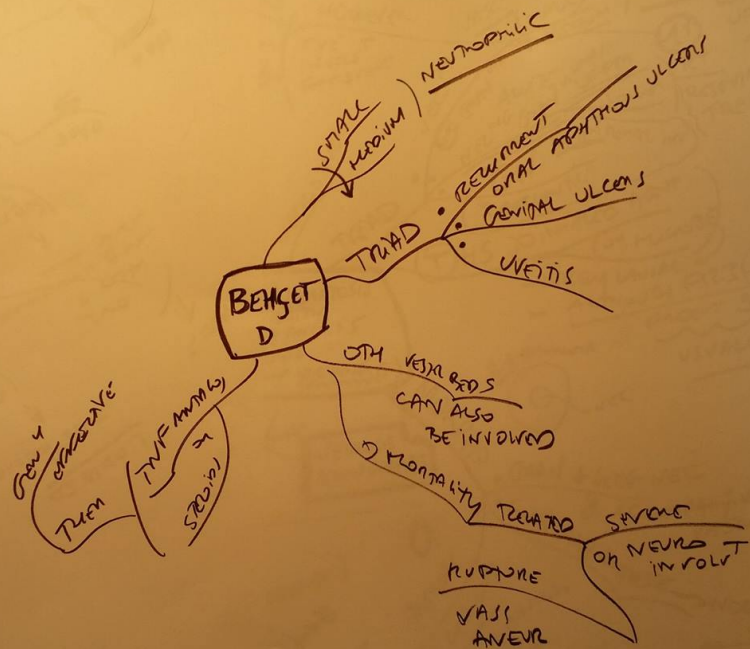
TYPE
PCV

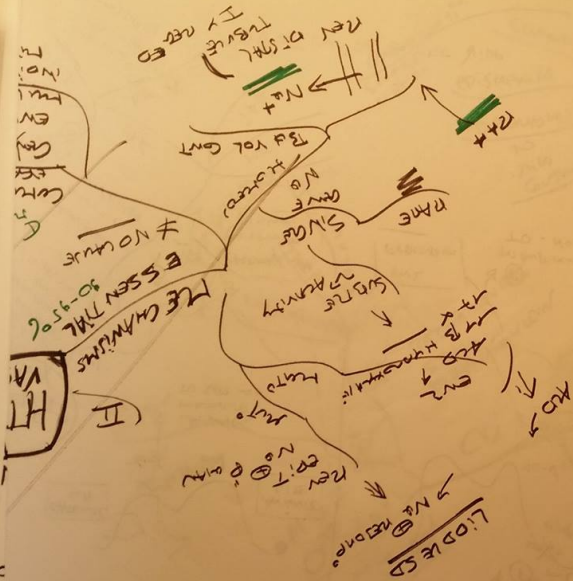
ONLY INFORMATIVE (NEXT)

JAVY UNDER GOING ADDF
ARE SEEN

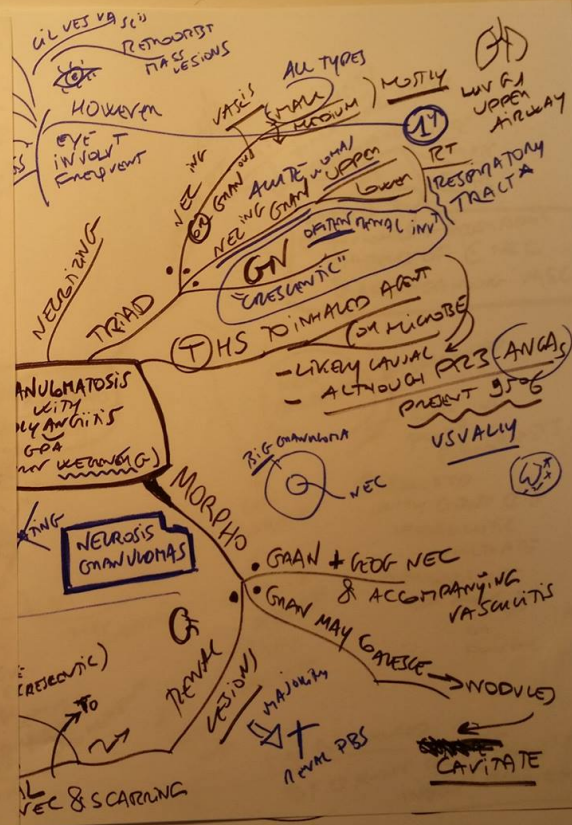
LEUKOCYTIC CLASSIC
VASCULITIS

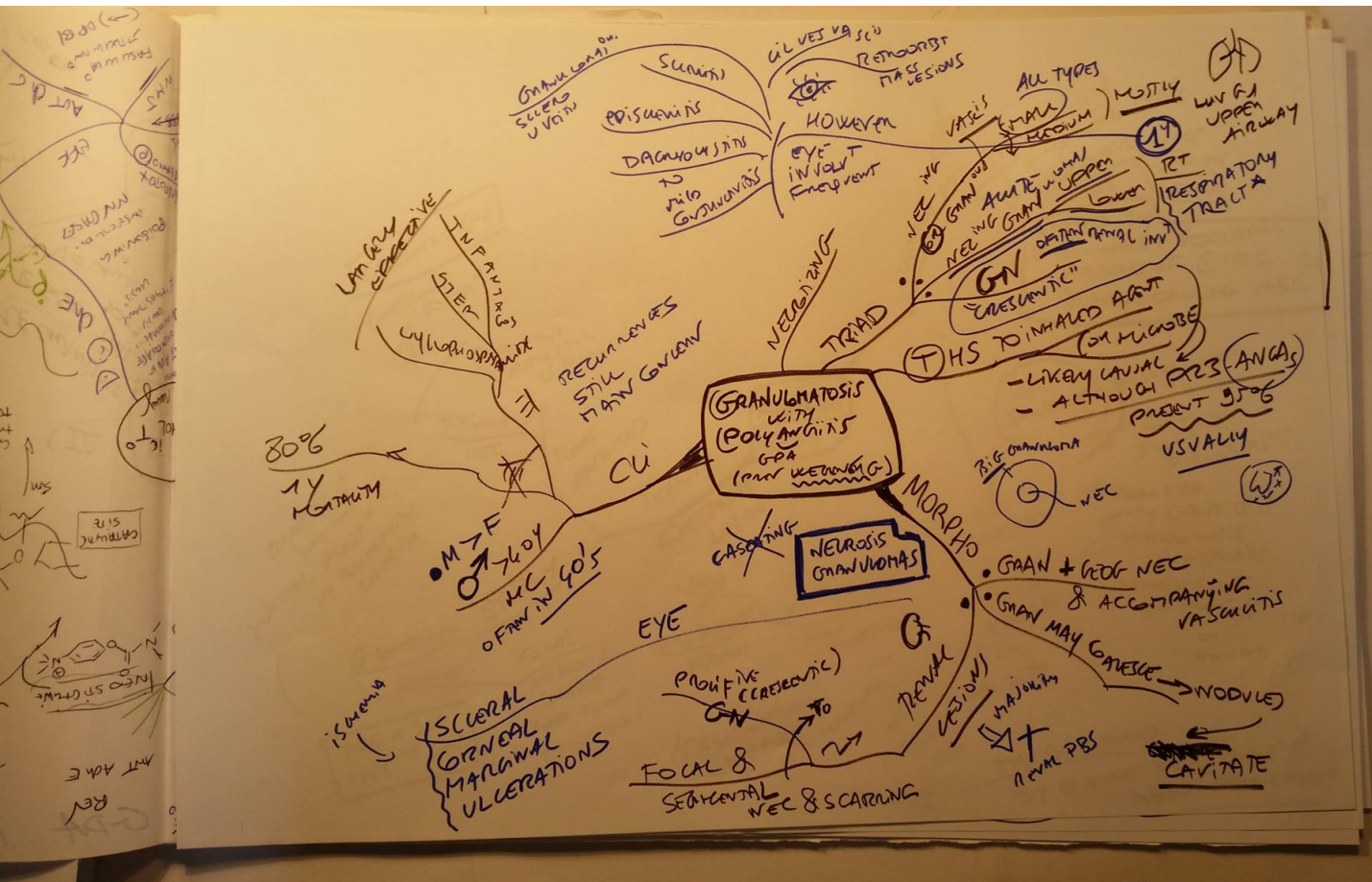


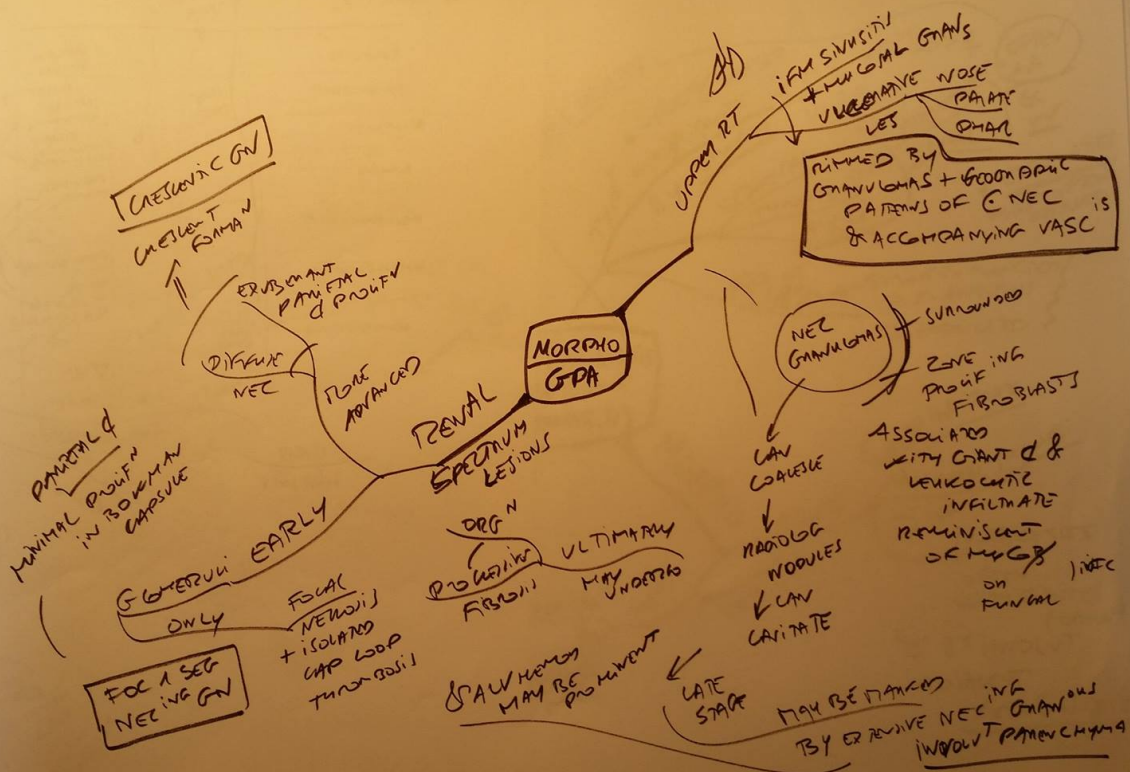


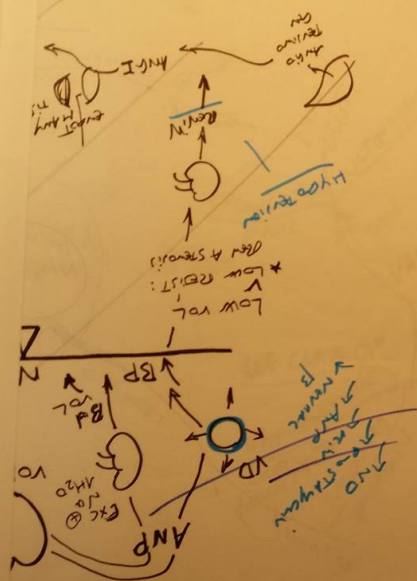


GPA (W6)

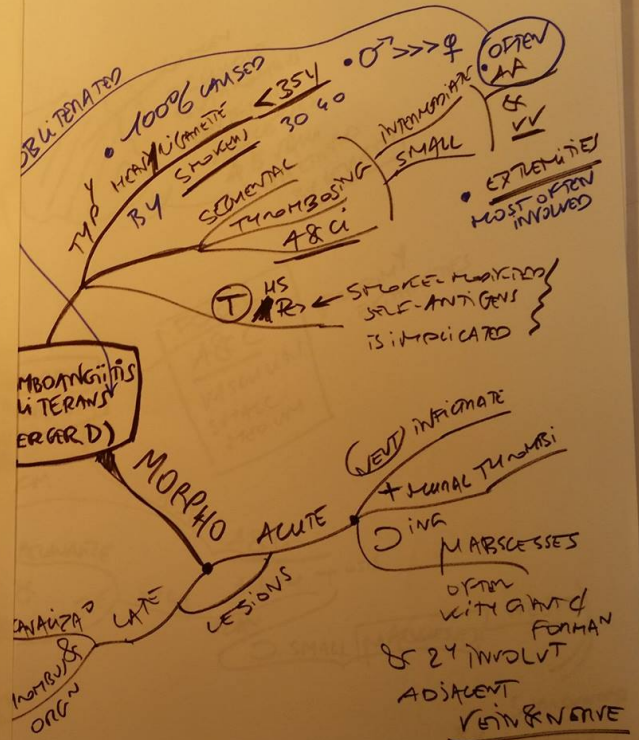


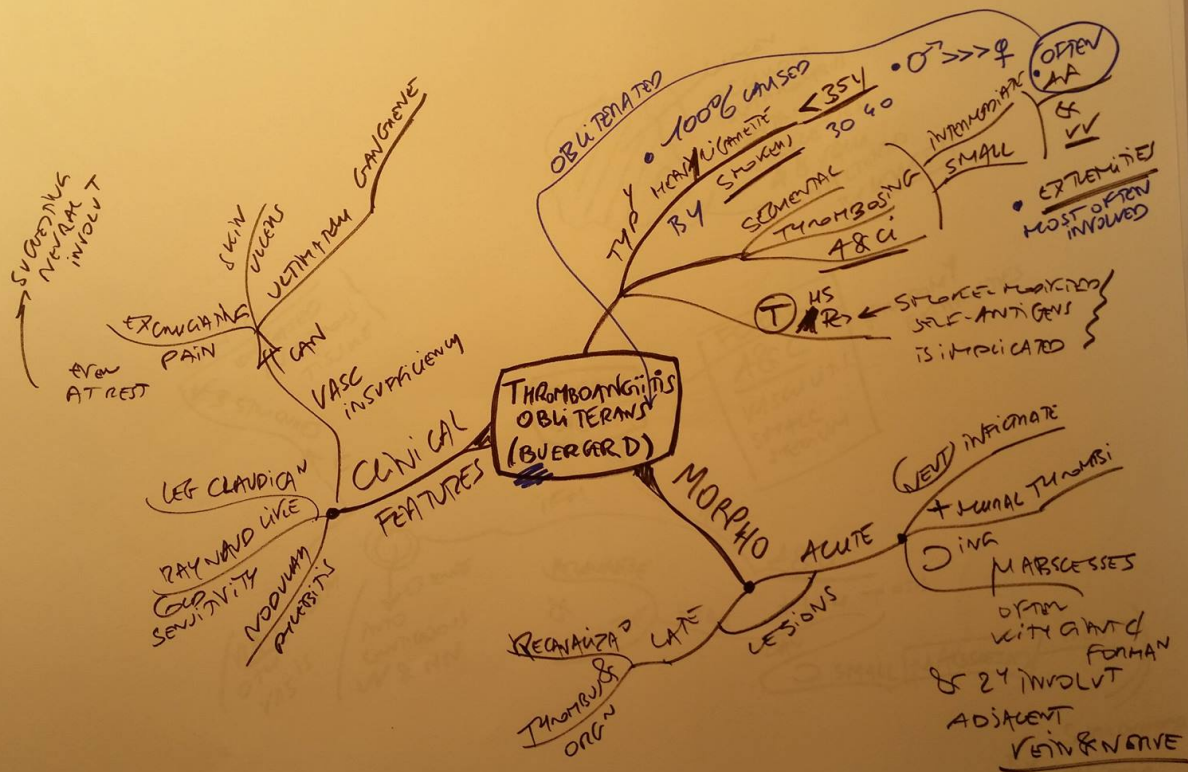


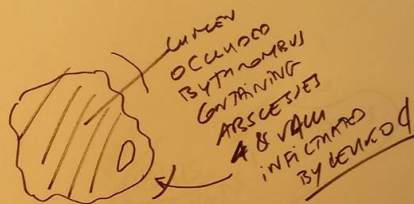




THROMBOANGIITIS OBITERANS







CAN BE
 ENCASED
 IN FIBROUS
 TISSUE
 3 STAGES

MORPHO
 BIOLOGY

FOCAL
 ABC
 VASCULAR
 SPACE
 TUMOR

PRIMARY
 EXTENTITIES

IFM

HISTO

(NAME WITH
 OTHER IS
 VAS)

EXTENDS
 INTO
 CONTIGUOUS
 VV & NN

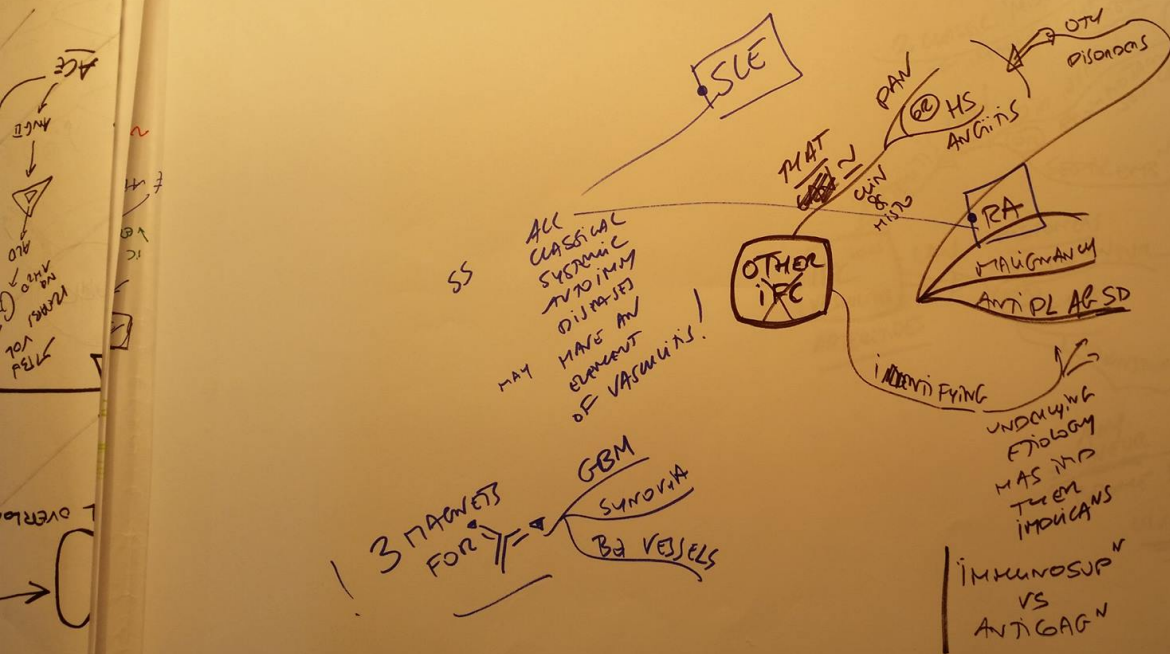
REORGANIZE
 &
 ORGANIZE

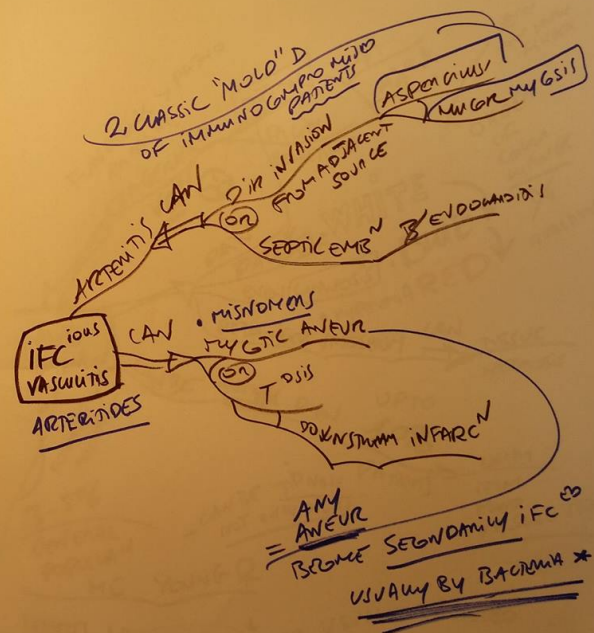
ABC
 + LUM TOSIS
 CAN

SMALL [MARTSUSSES]

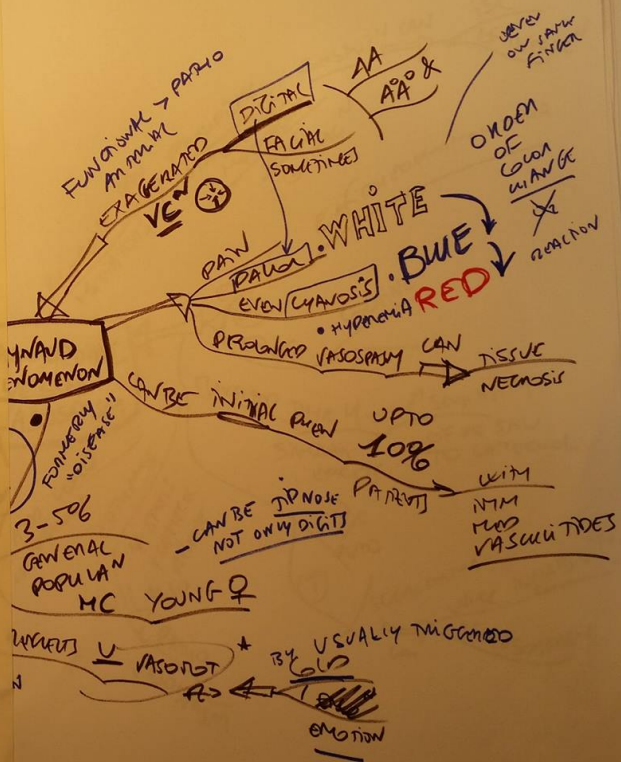
NEUT

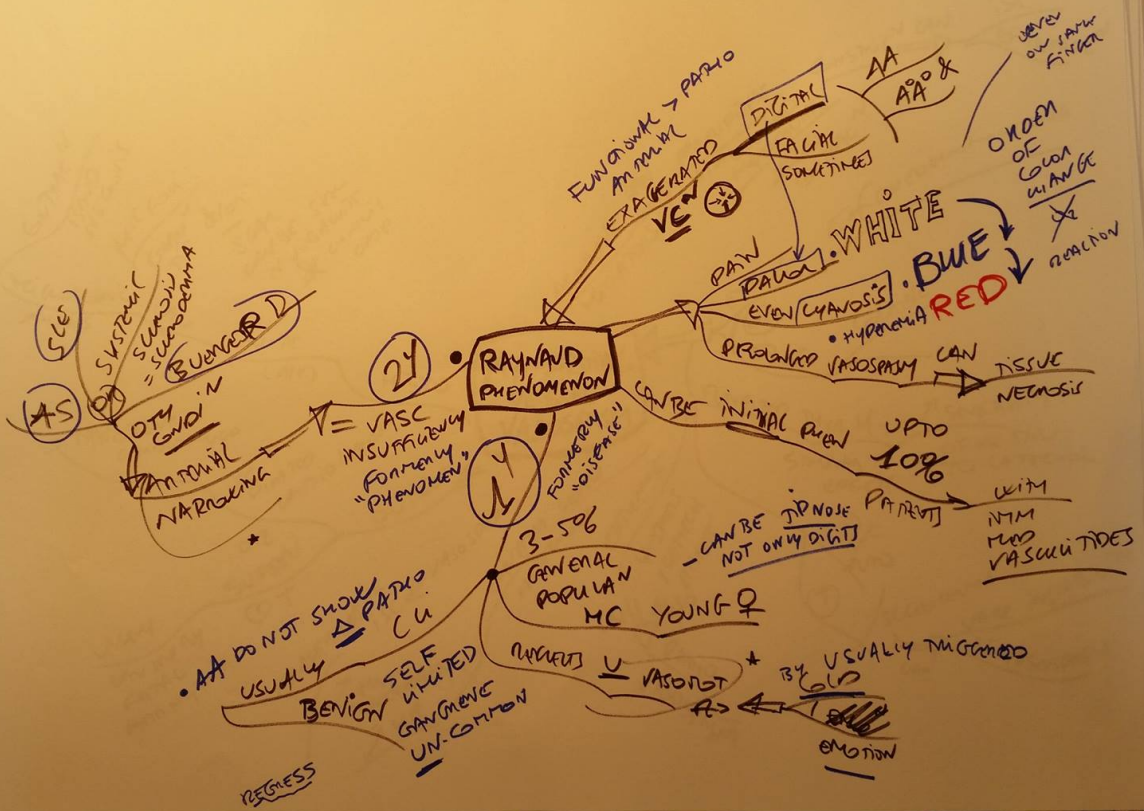
SURROUNDING
 BY GRANULIFM

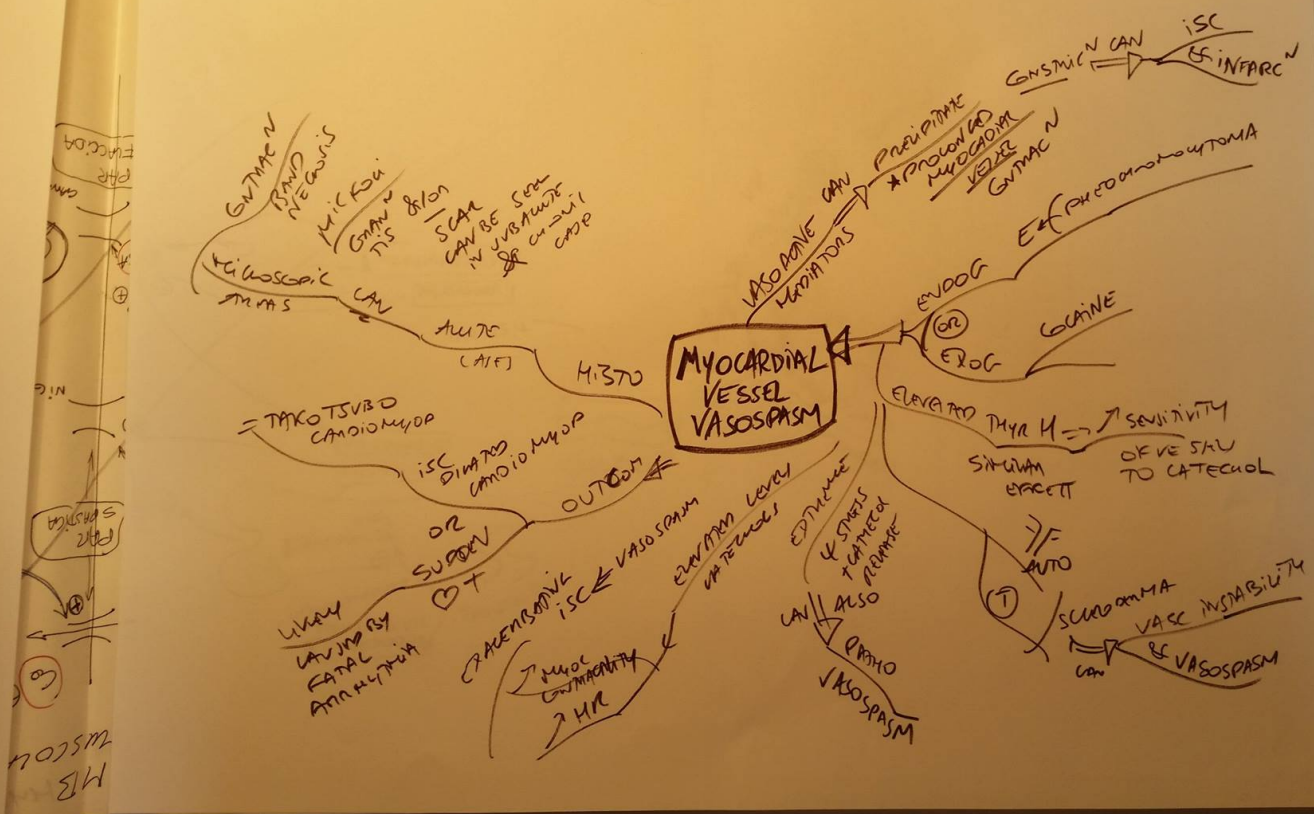


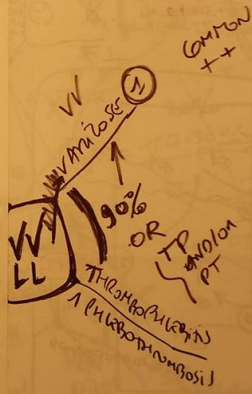


HYPERREACTIVITY

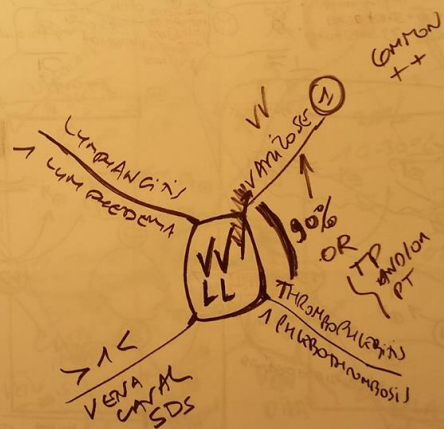
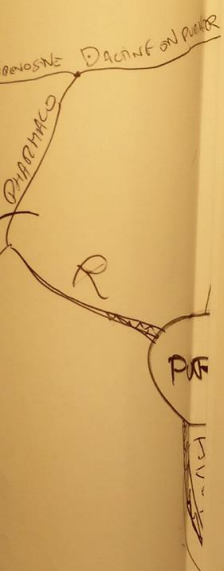


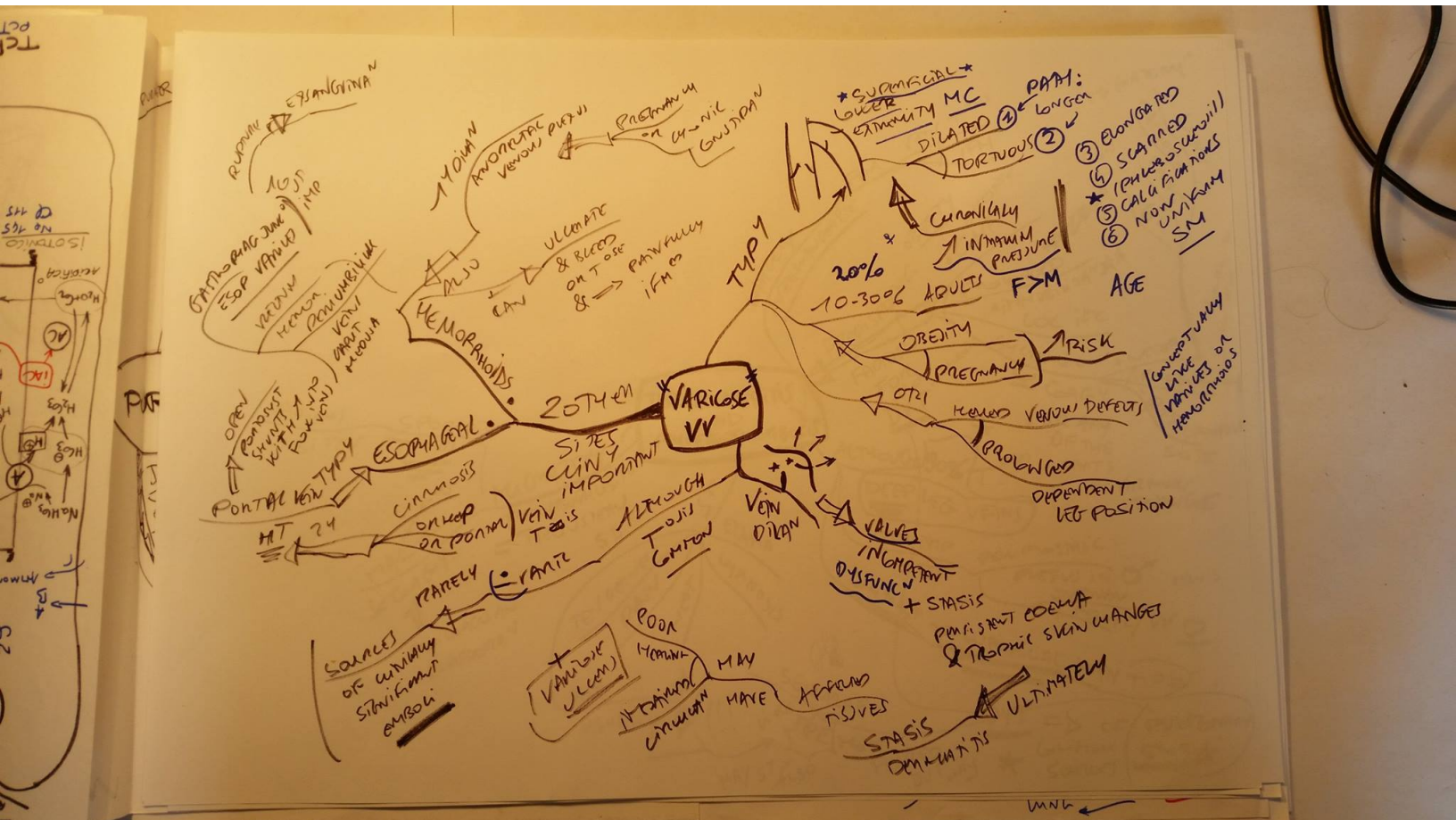






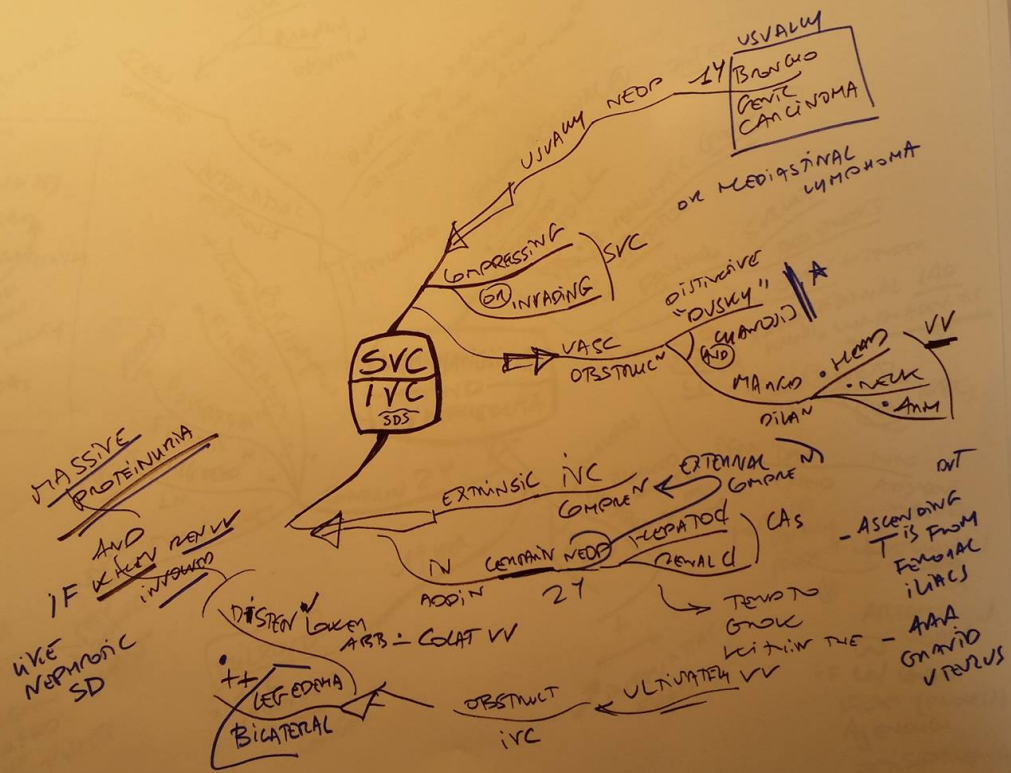
WALL





PUR

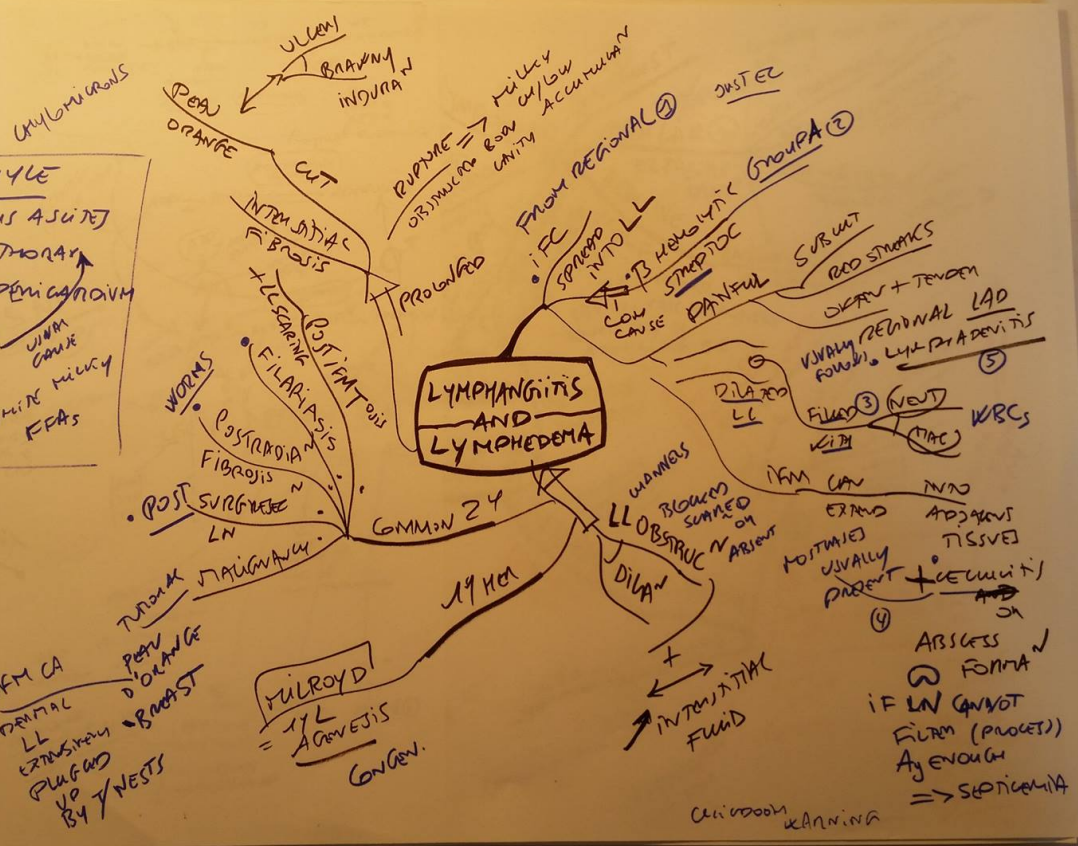
PUR



- CHYLE**
- chylous ascites
 - chylo thorax
 - chylo pericardium

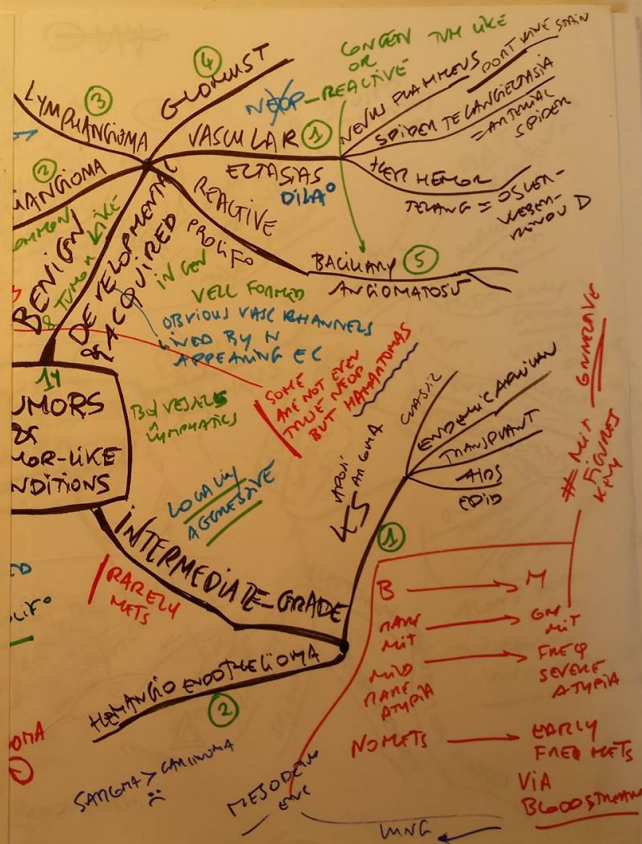
BT TD
 WORM CAUSE
 WHITE MILKY
 EFFUS

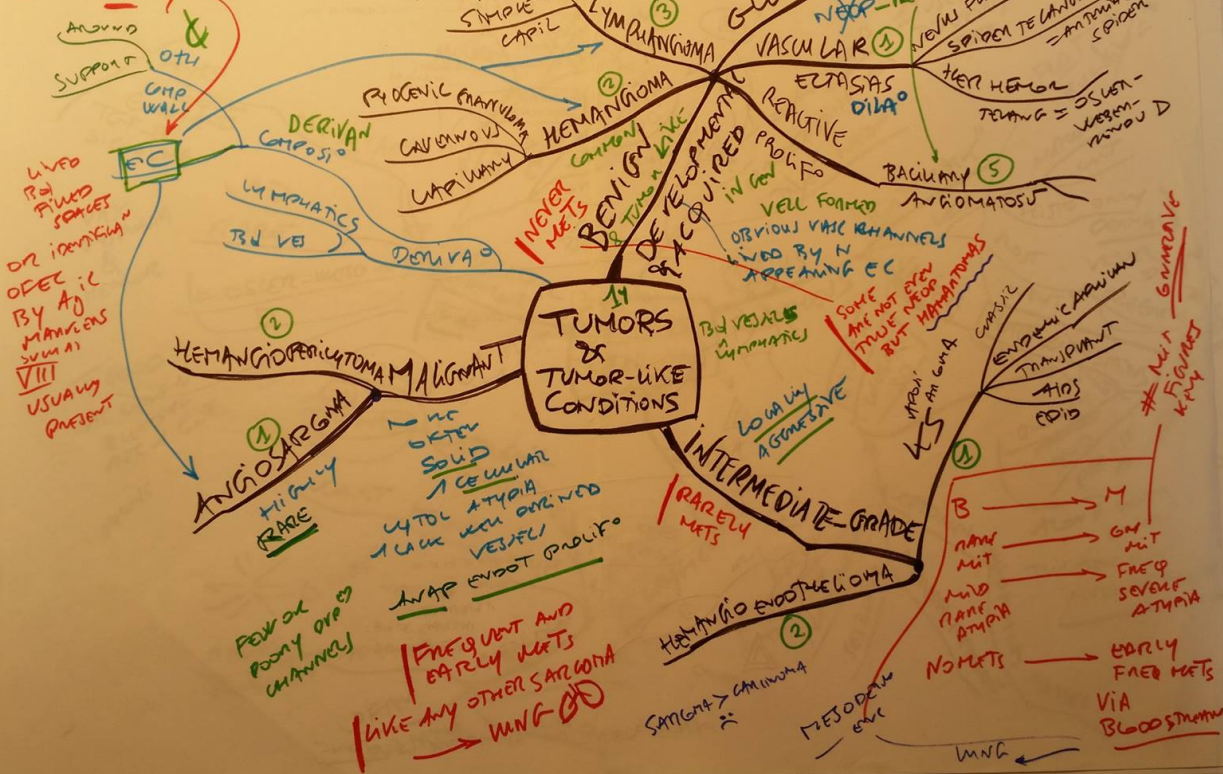
PURIN
 D D
 B B

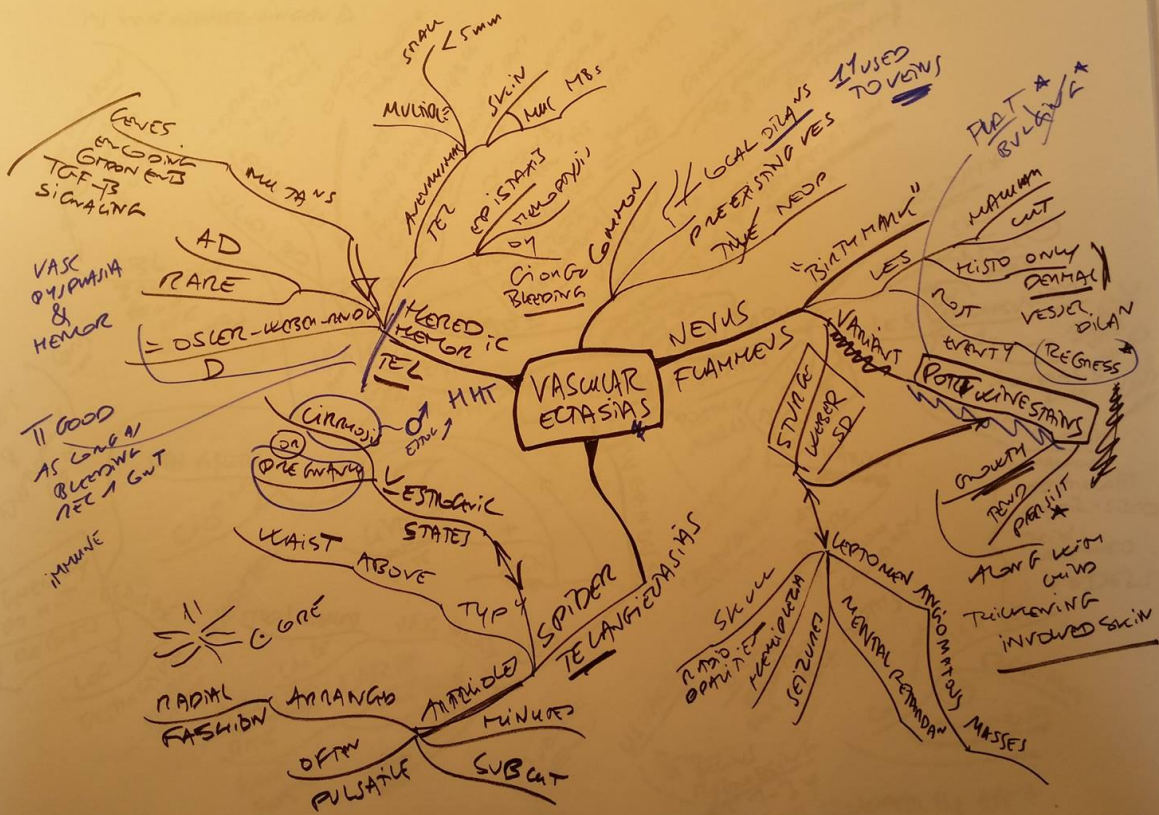


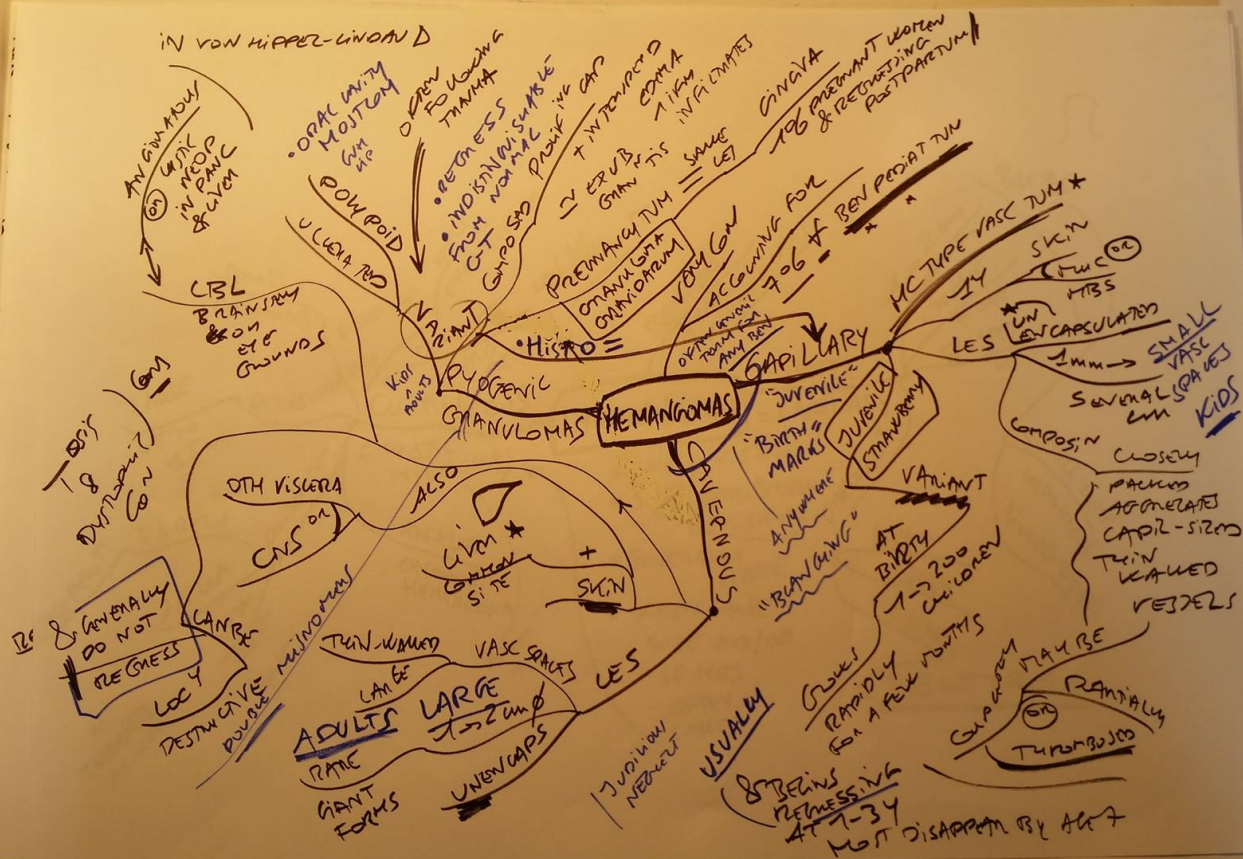
uncommon KANINA

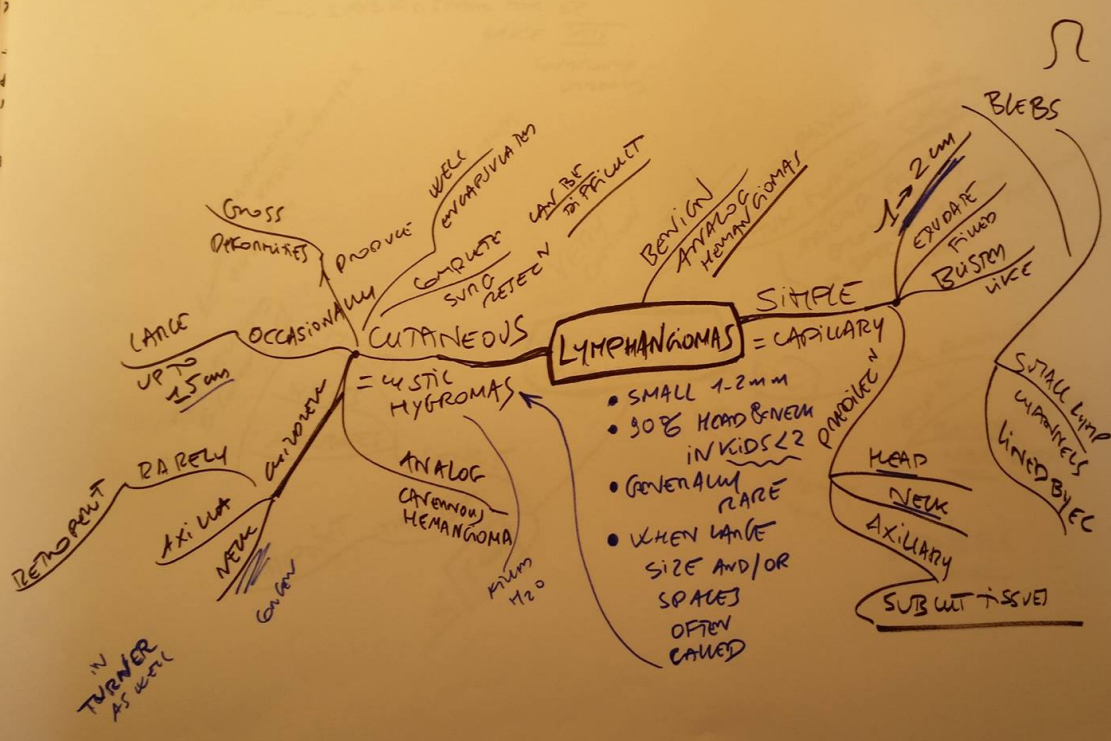
TUMORS











Almost all nose tum show E canal space
if not → search for ER
LIKE VIII

Commonly
oncogenic

Scarcely

BRAMING
VASC CHANNELS
↑
ADHESION

SPECIALIZED
GLANDS &
MASSSES
NESTS
AGGREGATES

CONSIST

PINPOINT MAY BE

< 1 cm

GLANDS TUMOR
= GLOMANGIOMA

VERY
COMMON

BE

EXQUISITE PAINFUL

TUM LOCATED
ARISING FROM
GLAND BODY
= SPECIES AV STM
INVOLVED IN TRANSFER

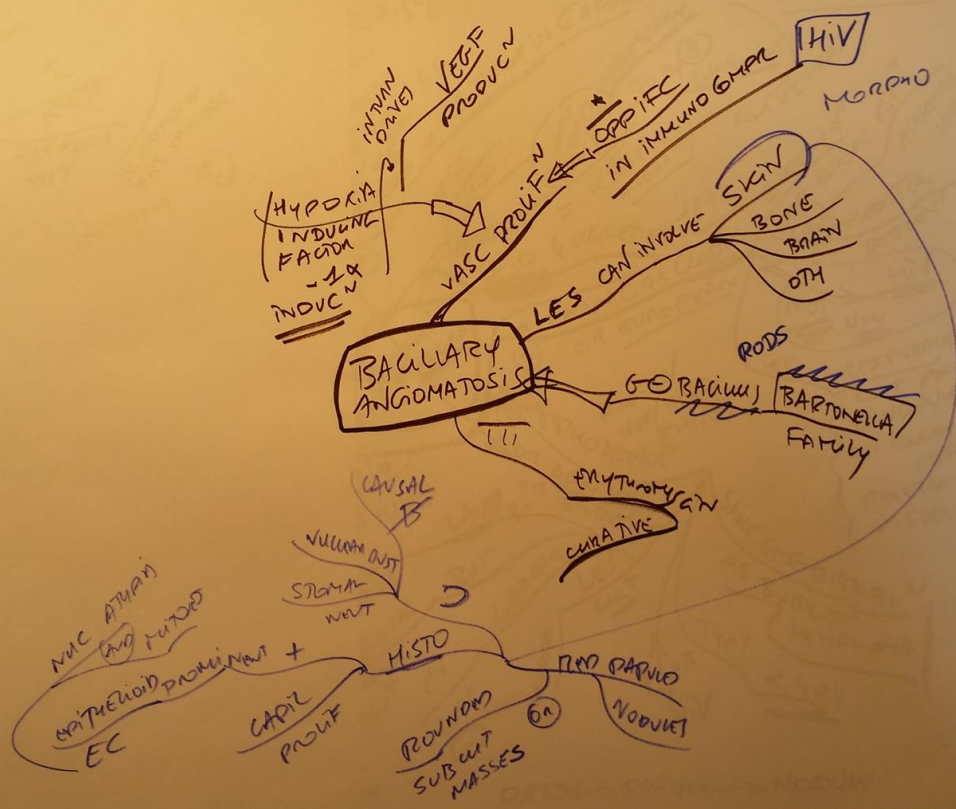
(MC)

EXU = CURATIVE

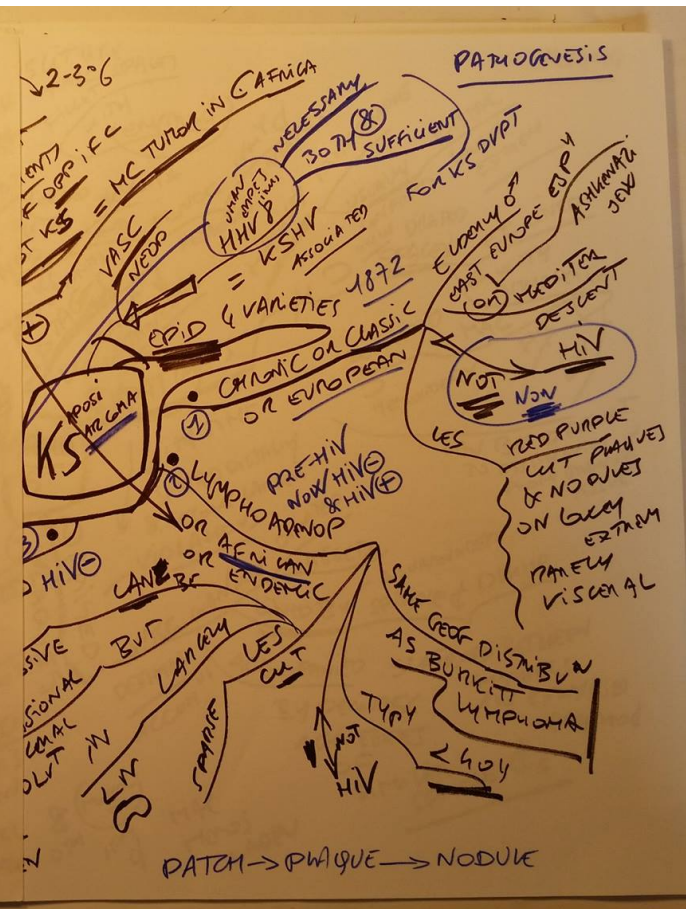
DISTAL ANALGES

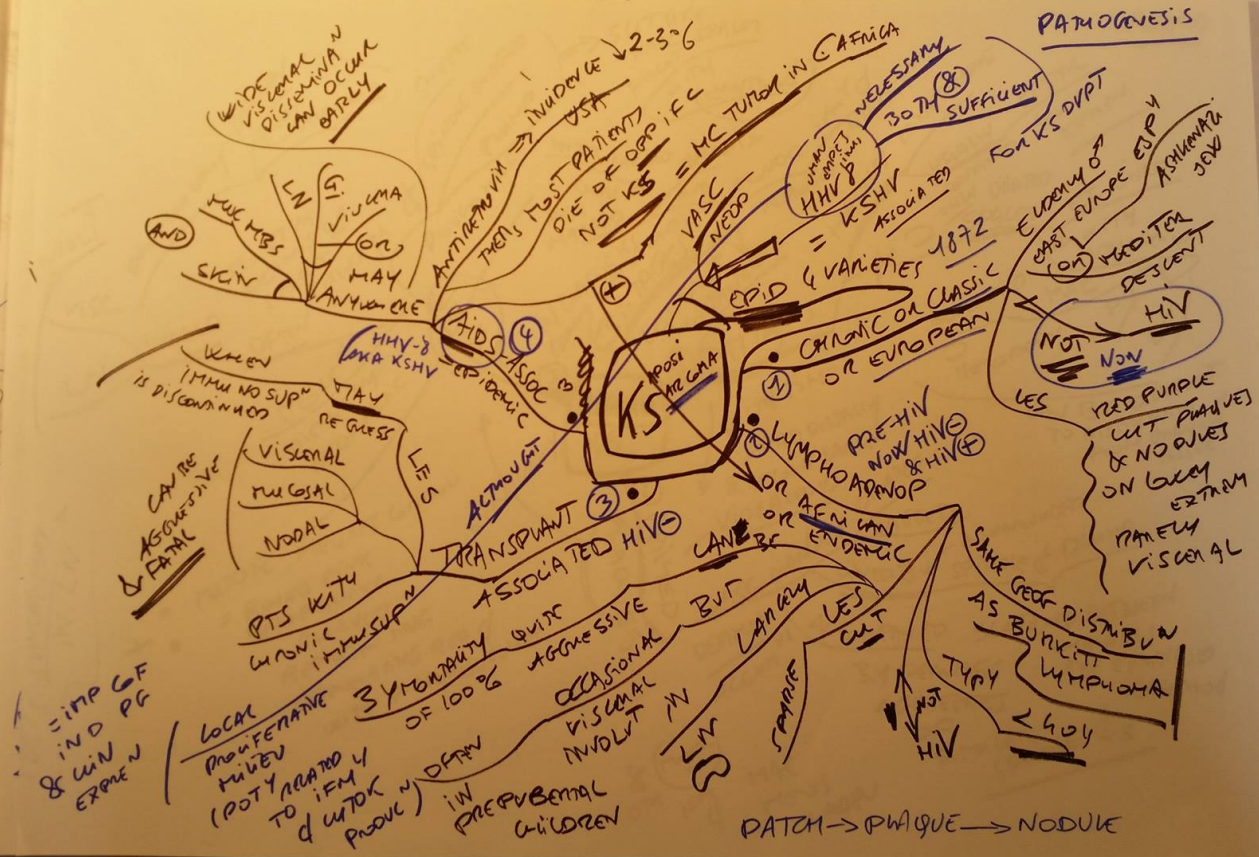
ESP
BENEATH
NAIL BEDS

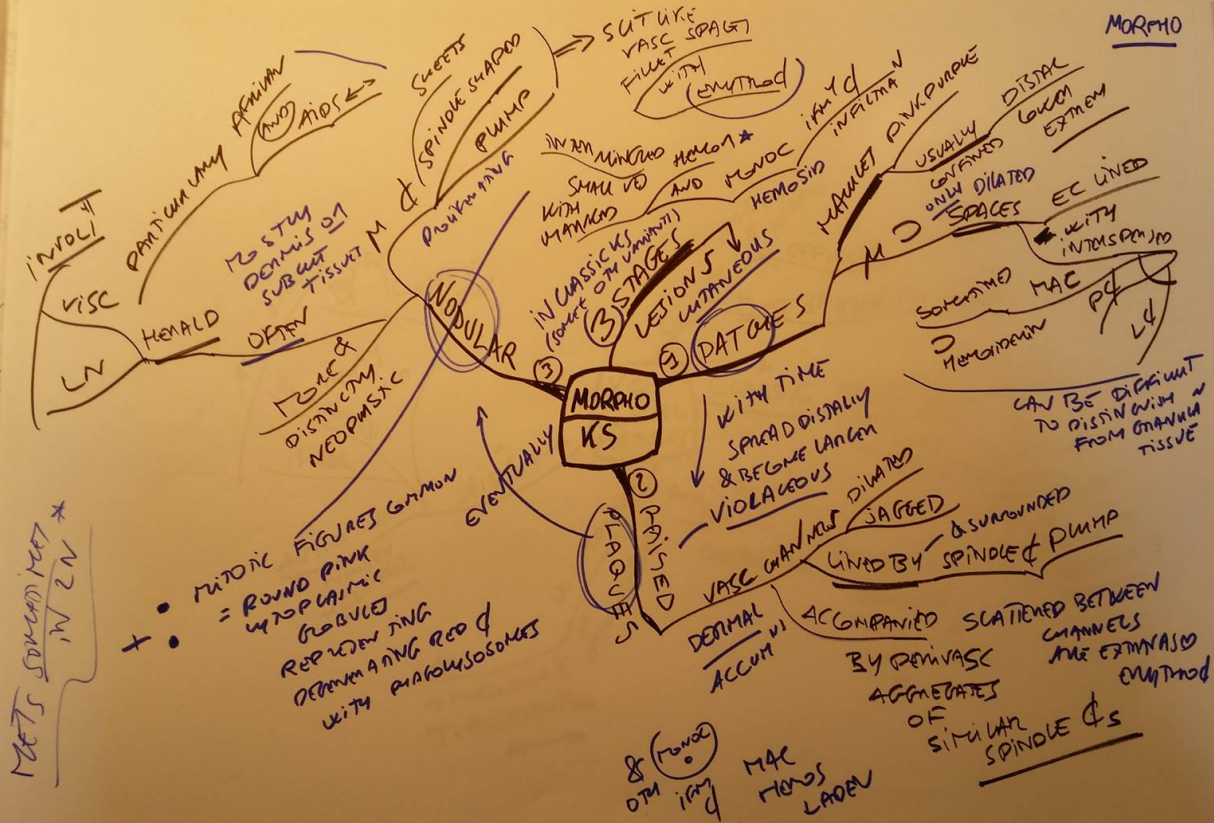
• PAINFUL

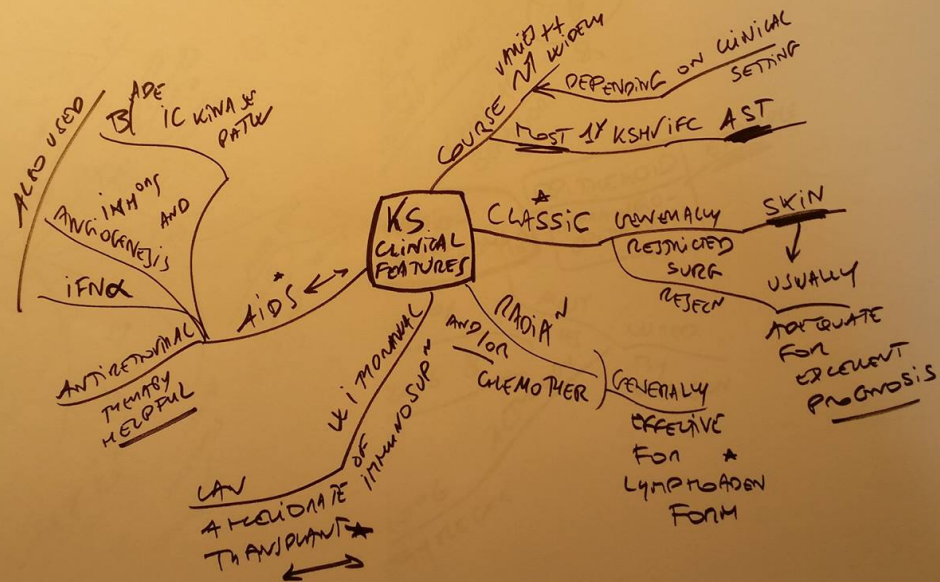


K









VS
ALMOST ALL MALIGNANT
= POTENTIALLY
VASC TUM
POSSIBLY METASTASIZABLE
LOOK LIKE
→ NOT TO MY
NO OTHER WRITE
FROM HERE
MIC

• Δ MAY REQUIRE
USE EC MARKERS
VIII or CD31

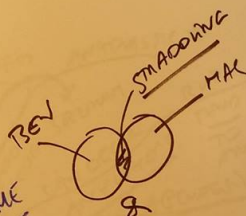
- ESPECIALLY IF
CUM WIT
VASC SPACE

- DIFFICULT TO SEE
- ESPECIALLY IF UNOIF ED
ENOUGH TO METASTASIZE
THAT ENDOTHELIAL
SPACE NOT CLUMP
SEEN

NOTE LACK OF
STAINING NAME
CLINICAL
BEHAVIORS

HEMANGIO-
ENDOTHELIOMAS

EPITHELIOID
HEMANGIO-
ENDOTHELIOMAS



MAY DIE

1506

2006 &

EVEN THOUGH
TEST

4006

MAY RECURE

MOST

BY
EXCISION

WOUND
BY
EXCISION

EXAMPLE

ENDOTOXIN
CAN BE DEM
BY I H STAINING
FOR CD31 /
OR VWF

3
FNEP &
OFN (SITAR)
MUTASE

APICAL EC
FORMING
VASCULAR

3
C Areas
NEC A MEMO
WITH MARGINS
REMARKS
REDAWN TO
GRAY-WHITE
SOFT
LARGE

4
BEHAVE AS
ANY SARCOMA
MIGHT BE
EARLY PETS
PULM

4
HUMANIO
SARCOMA
WELL DIFFER
ANAPLASTIC

4
HUMANIO
SARCOMA
WELL DIFFER
ANAPLASTIC

ANGIOSARCOMAS

4
HUMANIO
SARCOMA
WELL DIFFER
ANAPLASTIC

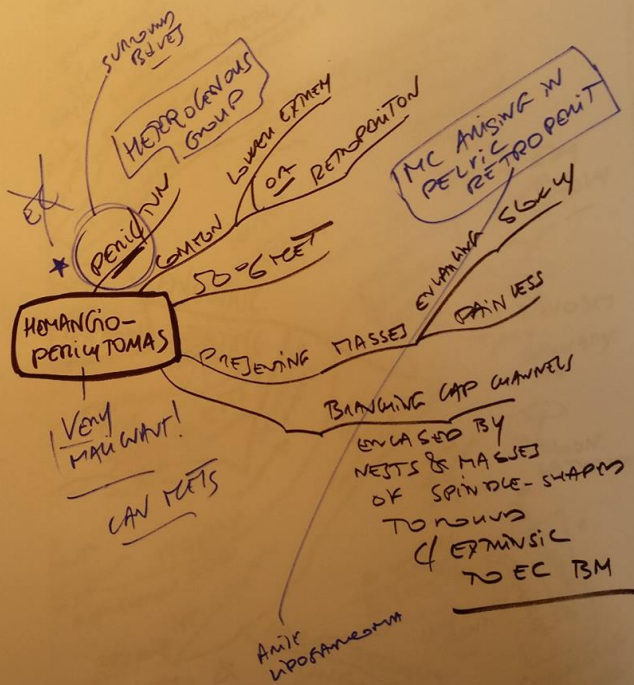
4
HUMANIO
SARCOMA
WELL DIFFER
ANAPLASTIC

4
HUMANIO
SARCOMA
WELL DIFFER
ANAPLASTIC

4
HUMANIO
SARCOMA
WELL DIFFER
ANAPLASTIC

4
HUMANIO
SARCOMA
WELL DIFFER
ANAPLASTIC

4
HUMANIO
SARCOMA
WELL DIFFER
ANAPLASTIC



[illegible]