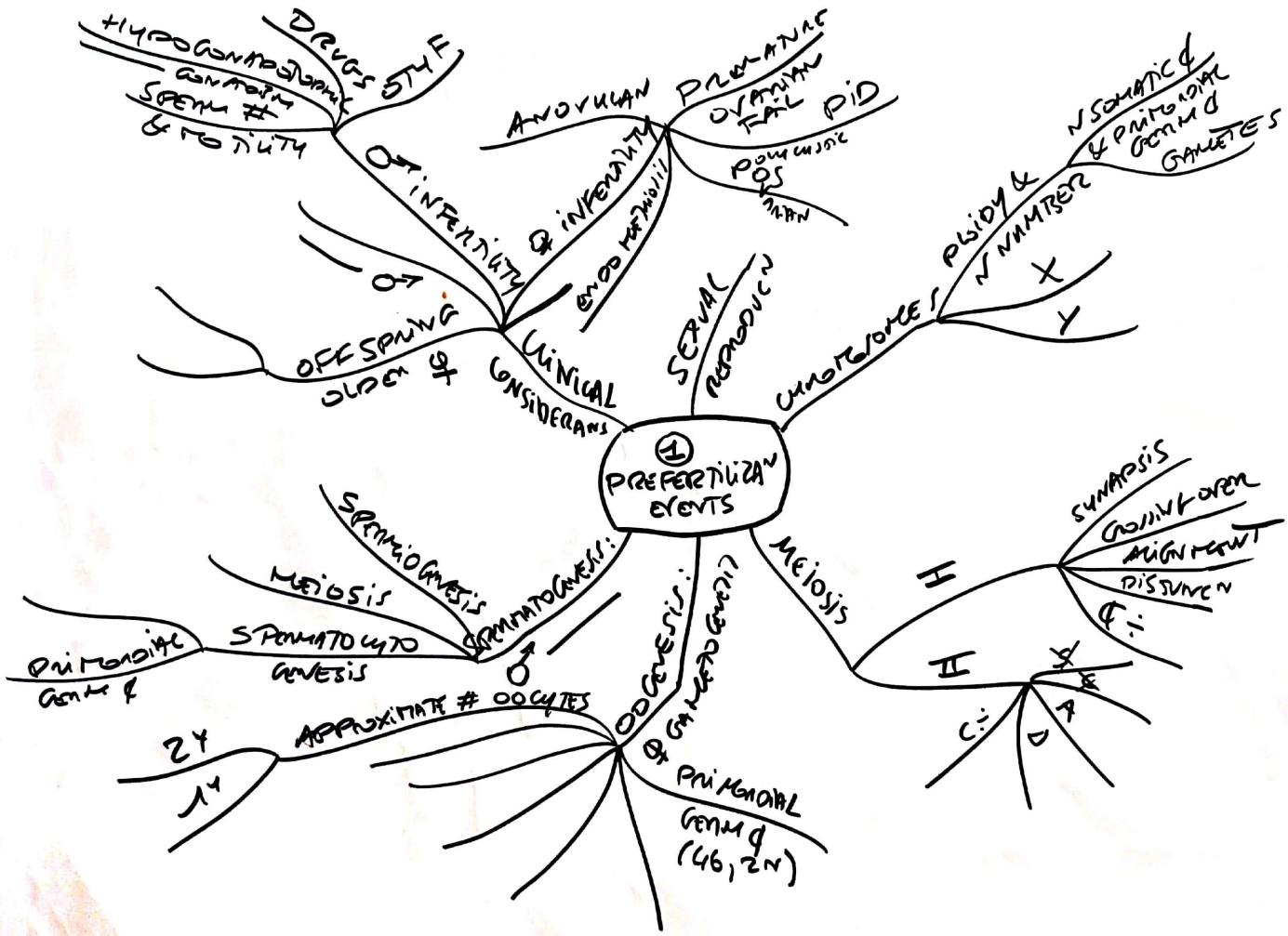
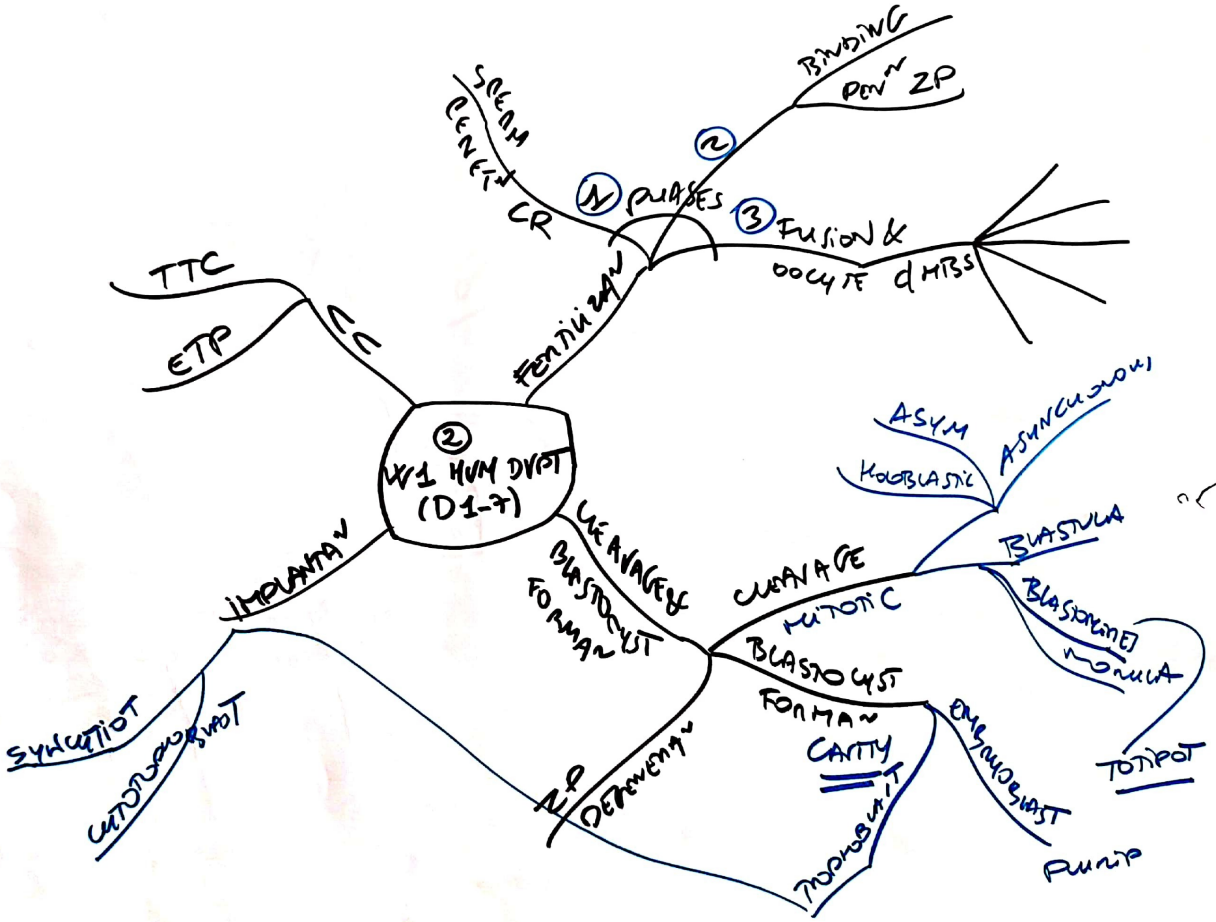
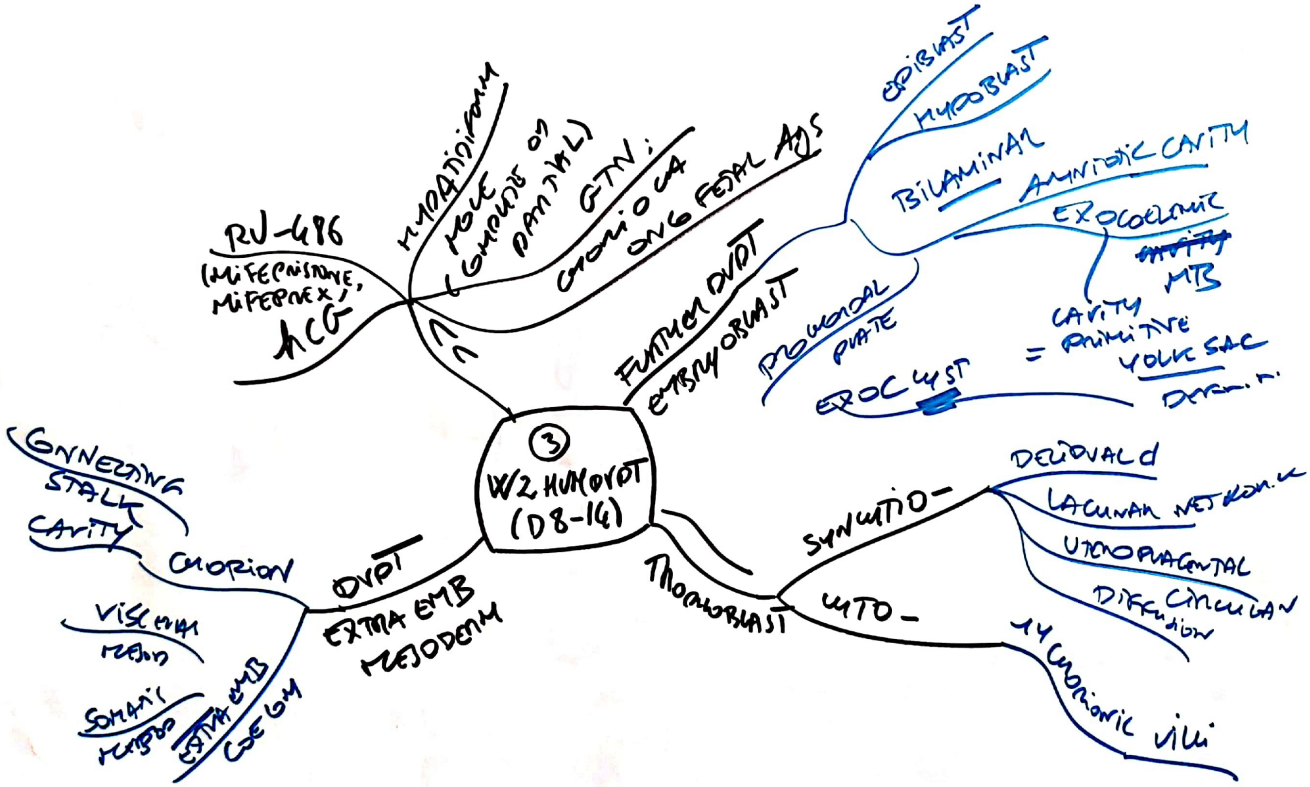
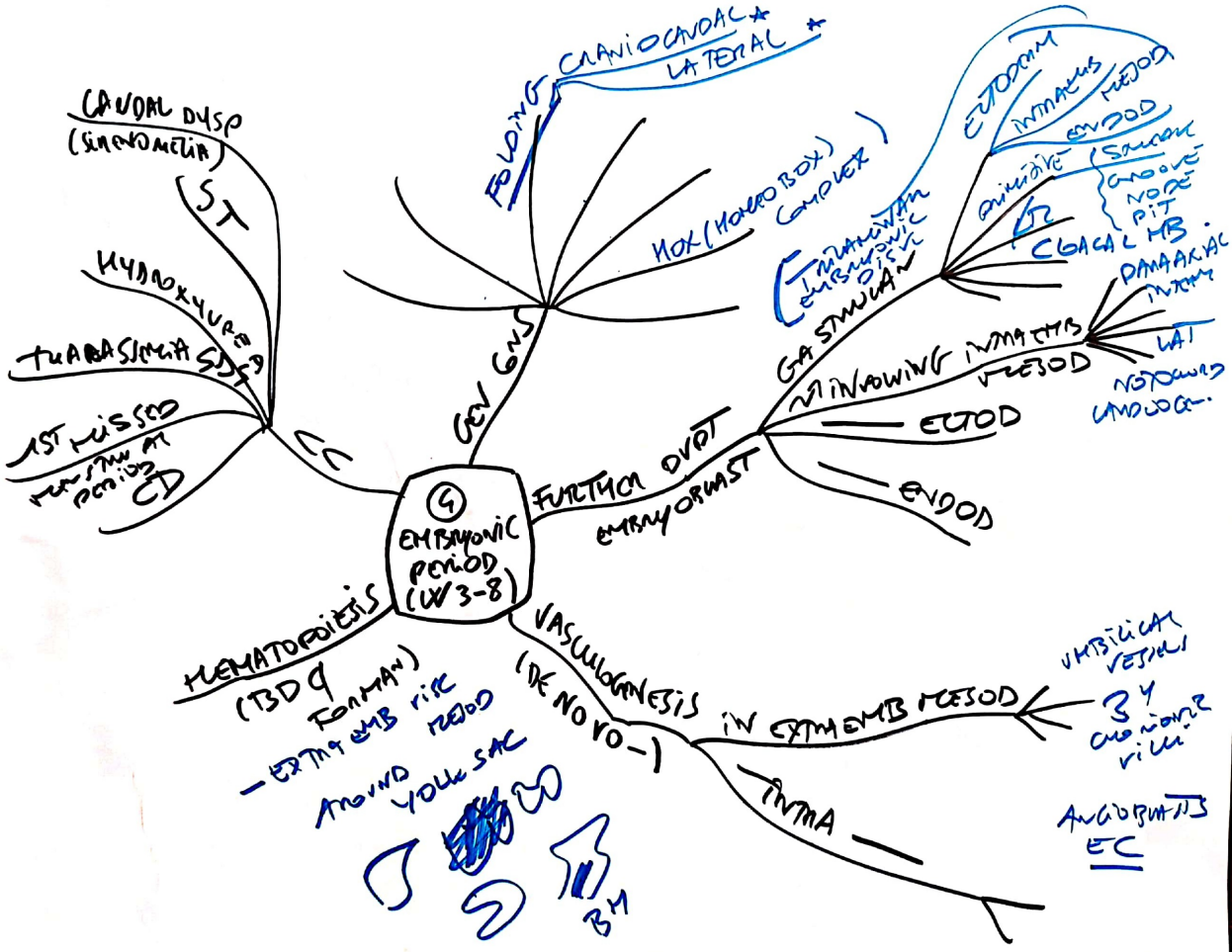
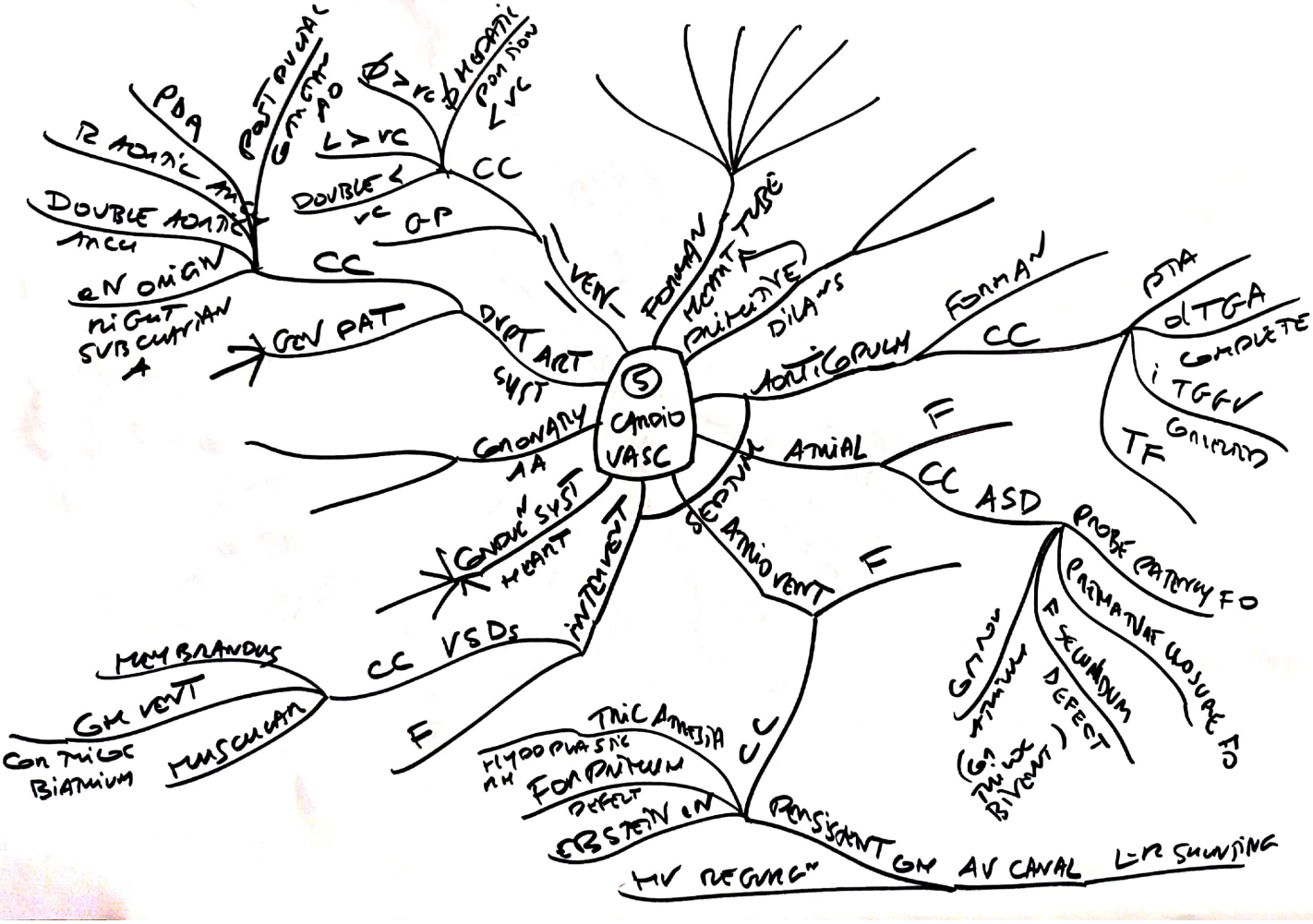
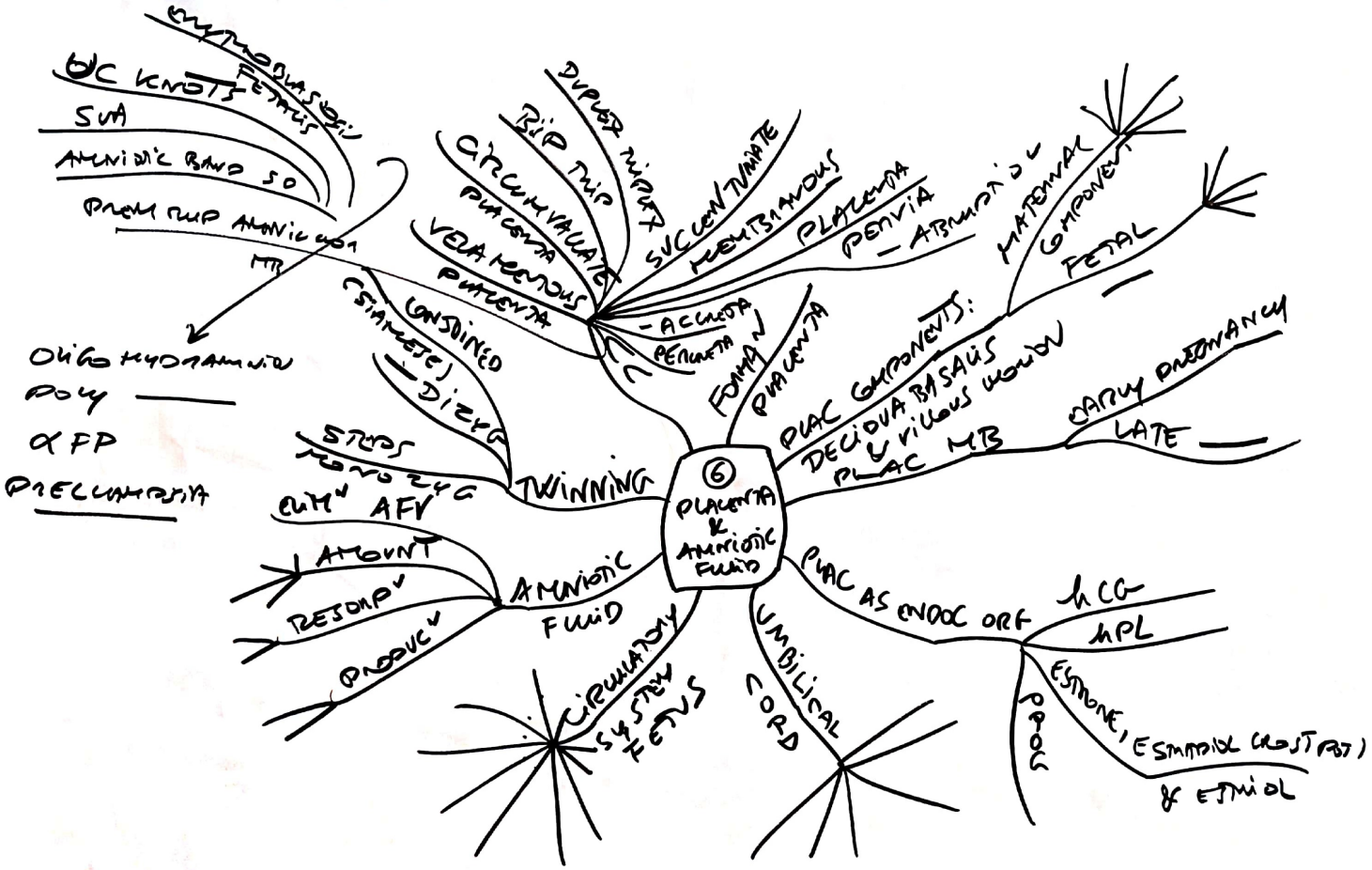

1
PREFERTILIZATION EVENTS
CLINICAL CONSIDERATIONS
♂ INFERTILITY
HYPOGONADOTROPIC
GONADOTROPIN
SPERM #
& MOTILITY
DRUGS
STYLE
♀ INFERTILITY
ANOVULATION
PREMATURE OVARIAN FAILURE
PID
POLYCYSTIC POS
ENDOMETRIOSIS
OFFSPRING
OLDER ♀
♂
SEXUAL REPRODUCTION
CHROMOSOMES
PLOIDY & N NUMBER
N SOMATIC & PRIMORDIAL GERM & GAMETES
X
Y
MEIOSIS
I
SYNAPSIS
CROSSING OVER
ALIGNMENT
DISJUNCTION
II
A
D
C
SPERMATOGENESIS:
SPERMIOGENESIS
MEIOSIS
SPERMATOCYTOGENESIS
♂
PRIMORDIAL GERM ♂
OOGENESIS:
♀ GAMETOGENESIS
APPROXIMATE # OOCYTES
2Y
1Y
PRIMORDIAL GERM ♀ (46, 2N)

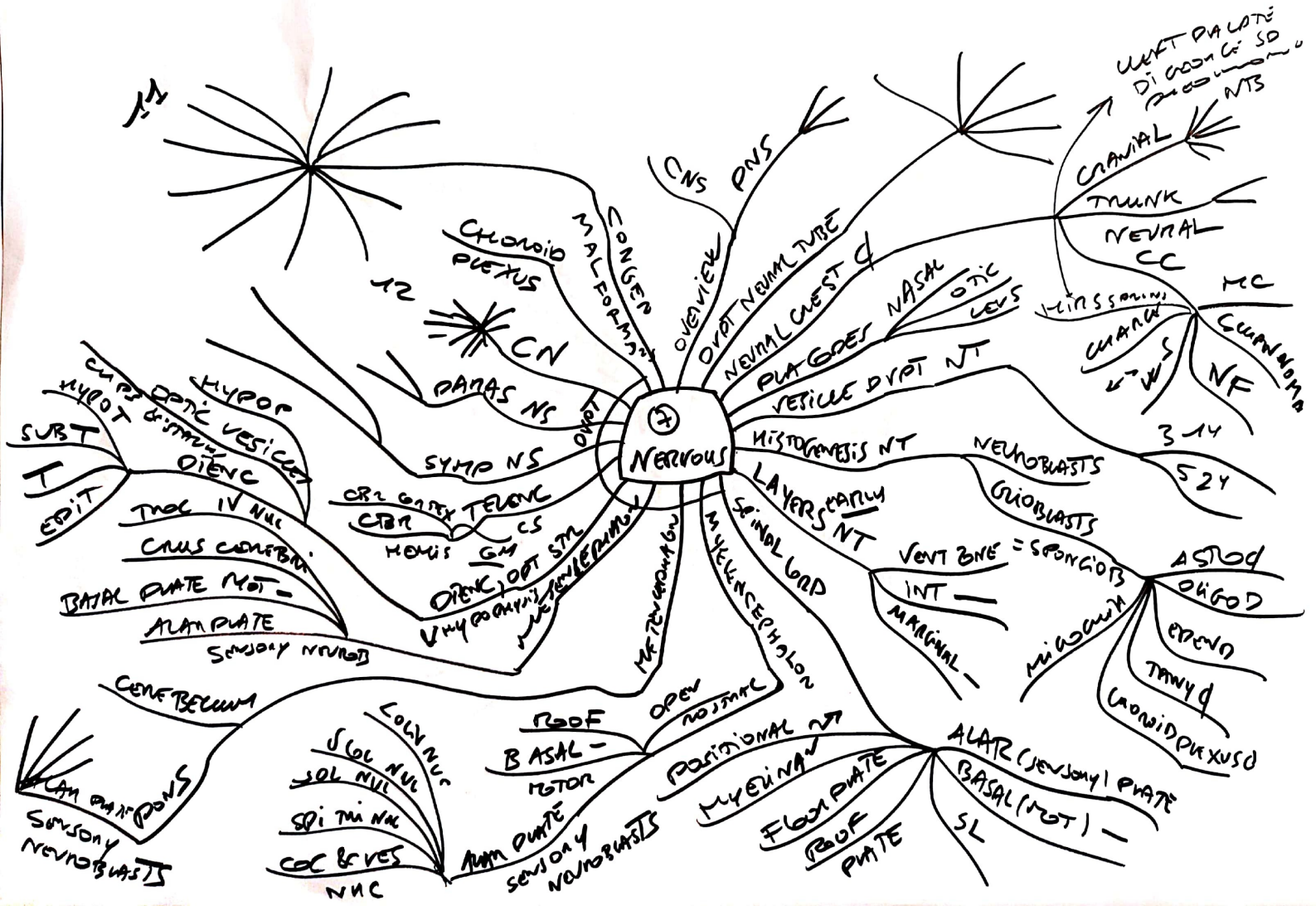

② W1 HUM DVPT (D1-7)
TTC
ETP
CC
SPERM
PENETN
CR
① PHASES
② BINDING
PENN ZP
③ FUSION &
OOCYTE & MBS
FERTILIZATN
CLEAVAGE & BLASTOCYST FORMATN
ASYM
ASYNCHRONOUS
HOMOBLASTIC
BLASTULA
BLASTOMERES
MORULA
CLEAVAGE
MITOTIC
BLASTOCYST FORMATN
CAVITY
TROPHOBLAST
EMBRYOBLAST
TOTIPOT
PLURIP
ZP DEGENERATN
IMPLANTATN
SYNCITIOT
CYTOTROPHOBLAST

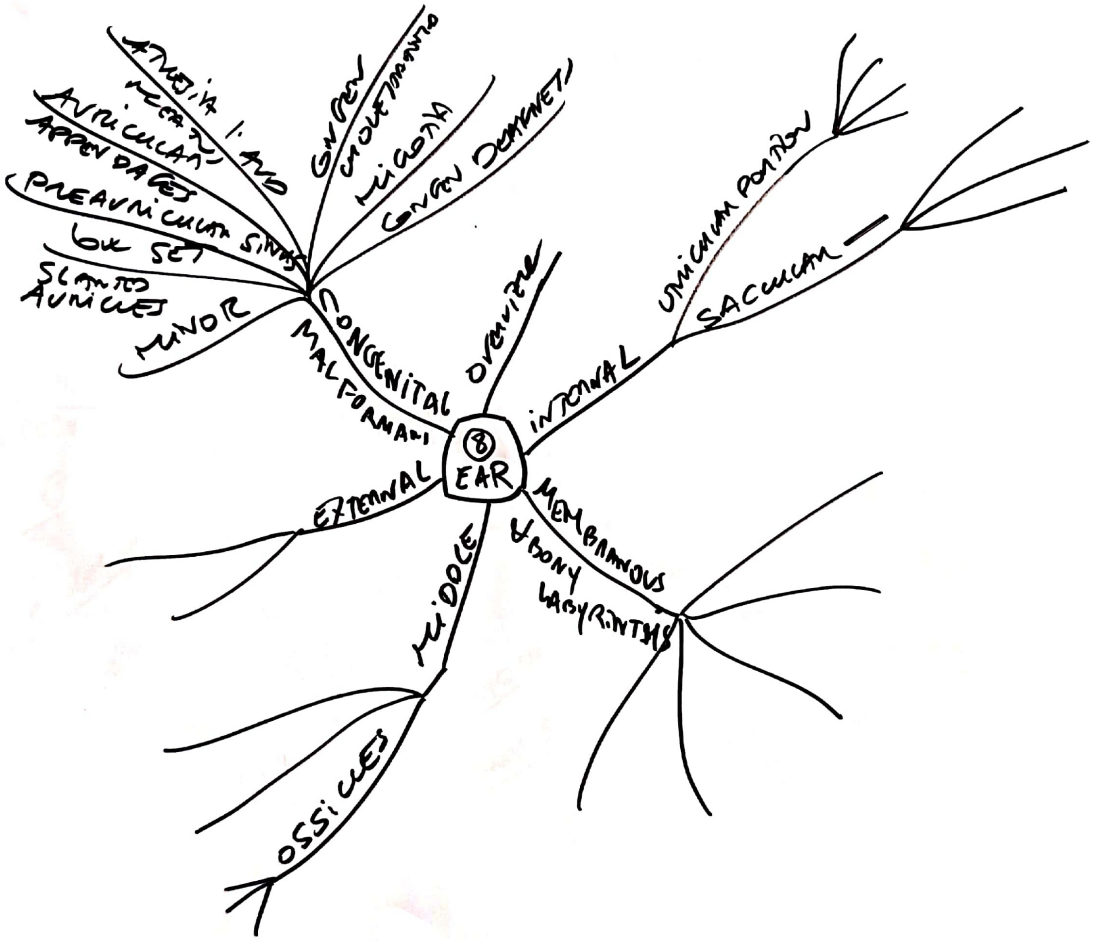

3
W2 HUMDVDT
(D8-14)
RU-486
(MIFEPRISTONE, MIFEPREX)
ACG
HYDATIDIFORM MOLE (COMPLETE OR PARTIAL)
GTN:
CHORIOCA
DVG FEDAL AGS
FURTHER DVDT
EMBRYOBLAST
EPIBLAST
HYPOBLAST
BILAMINAL
AMNIOTIC CAVITY
EXOCOELOMIC
MTB
PROCHORDAL PLATE
EXOCYST
CAVITY
PRIMITIVE YOLK SAC
DVDT
EXTRA EMB MESODERM
CHORION
CONNECTING STALK
CAVITY
VISCERAL MESO
SOMATIC MESOD
EXTRA EMB COELOM
THROPHOBLAST
SYNCITIO-
DECIDUAL
LACUNAR NETWORK
UTERO PLACENTAL
DIFFUSION
CIRCULAR
CYTO-
CHORIONIC VILLI

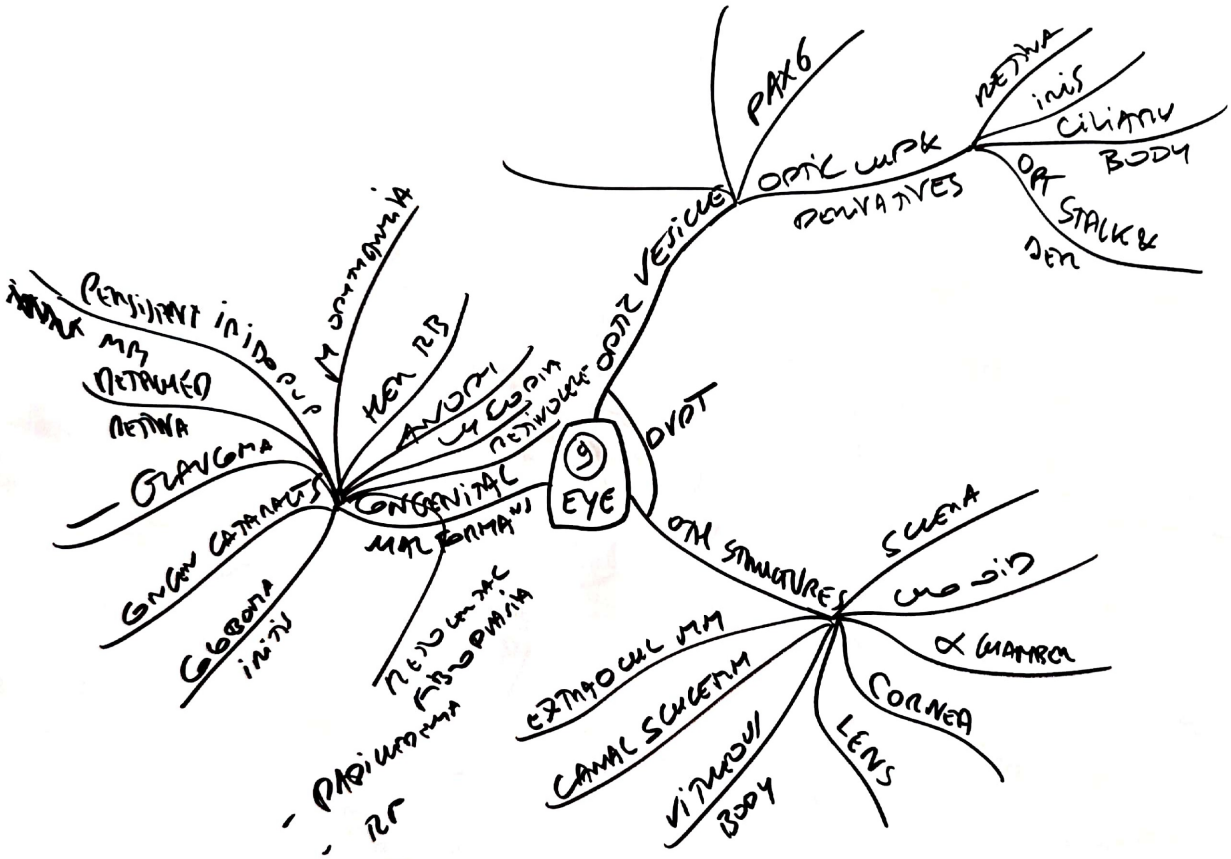

4
EMBRYONIC PERIOD (W 3-8)
GEN CNS
FOLDING
CRANIOCAUDAL
LATERAL
HOX (HOMEOBOX) COMPLEX
CC
CAUDAL DYSP (SIRENOMELIA)
ST
HYDROXYUREA
THALASSEMIA SDF
1ST MISSED MENSTRUAL PERIOD
CD
FURTHER DVPT EMBRYOGENAST
GASTRULATION
INVAGINATION
PRIMITIVE STREAK
ECTODERM
INTRAEMBR MESOD
EXTRAEMB MESOD
PRIMITIVE PIT
CLOACAL MB
PARAAXIAL INTERM
LAT
NOTOCHORD CANDOCA.
INVAGINATING INTRAEMB MESOD
ECTOD
ENDOD
VASCULOGENESIS (DE NOVO-)
IN EXTRAEMB MESOD
UMBILICAL VESSELS
3 4 CHORIONIC VILLI
INTRA
ANGIOGENESIS
EC
HEMATOPOIESIS (TBD 9 FORMAN)
- EXTRA EMB RIM MESOD
AROUND YOLK SAC
BM

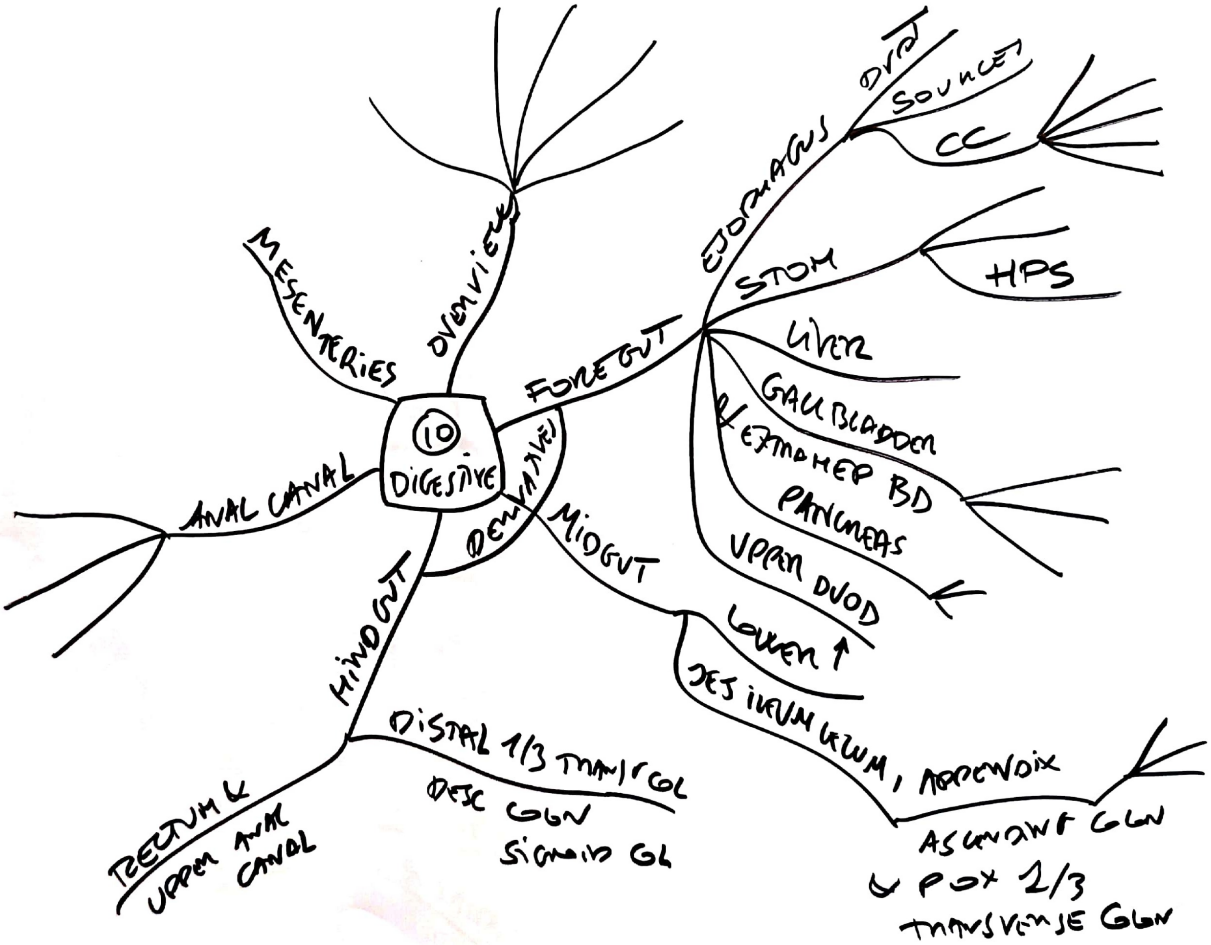

5
CARDIO VASC
PDA
R AORTIC ARCH
DOUBLE AORTIC ARCH
ON OMGN
RIGHT SUBCLAVIAN A
POSTDUCTAL COARCTN AO
L > RC
DOUBLE L RC
Ø > RC
Ø MEGACOL PAN DIAM L RC
CC
CC
GRV PAT
DRPT ART SYST
VENT
FORMAN
MEMBT TUBE
PULMONARY DILATN
AORTICOPULM
FORMAN
CC
PTA
dTGA
COMPLETE
i TGFV
TF
CORONARY AA
CARDIC SYST HEART
INTERVENT
VSDs
CC
MEMBRANOUS
GR VENT
CONTRIBC BIATRIUM
MUSCULAR
F
SEPTUM
ATRIAL
F
CC ASD
PROBE PATENCY FO
PRIMARY CLOSURE FO
F SECUNDUM DEFECT
COMMON ATRIUM (GR TRUNK BIVENT)
ATRIOVENT
F
CC
TRIC ATRESIA
HYPOPLASIC RH VENTRICLE
DEFECT
EBSTEIN ON
PERSISTENT GR AV CANAL
L-R SHUNTING
HV REGURG

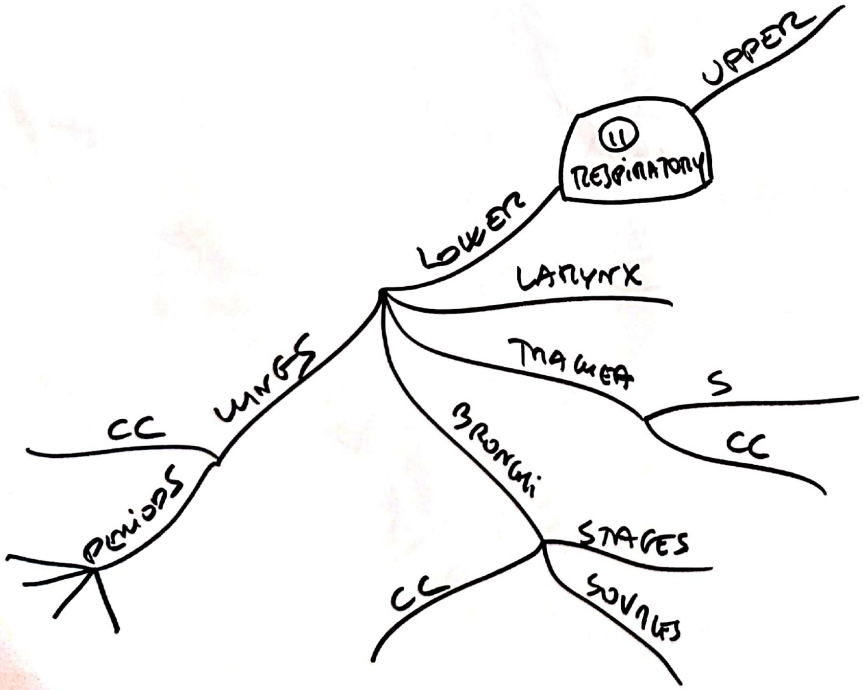

6
PLACENTA & AMNIOTIC FLUID
TWINNING
DICHORIONIC
MONOZYG
STEPS
AMNIOTIC FLUID
AMOUNT
RESORP
PRODUC
OLIGOHYDRAMNIOS
POLY
AFP
PRECLAMPSIA
CIRCULATORY SYSTEM FETUS
UMBILICAL CORD
PLAC AS ENDOC ORG
hCG
hPL
POPOC
ESTRONE, ESTRADIOL (PROSTPRO)
& ESTRIOL
PLAC COMPONENTS:
DECIDUA BASALIS
& VILLOUS MEMBR
PLAC MB
CAPILLY PREGNANCY
LATE
MATERNAL COMPONENT
FETAL
PENVIA
ABNORMALITIES
PLACENTA
SUCCENTURIATE
MEMBRANOUS
RIP TRIP
DUPLICATE NIPPLE
CIRCUMVALLATE
PLACENTA
VELAMENTOUS
PLACENTA
CONSDINED
(SIAMESE)
DIZYG
ACCRETA
PENETRATA
FORMATION PLACENTA
UC KNOTS
FETALIS
SUA
AMNIOTIC BAND SO
PREM RUP AMNIOTIC MB

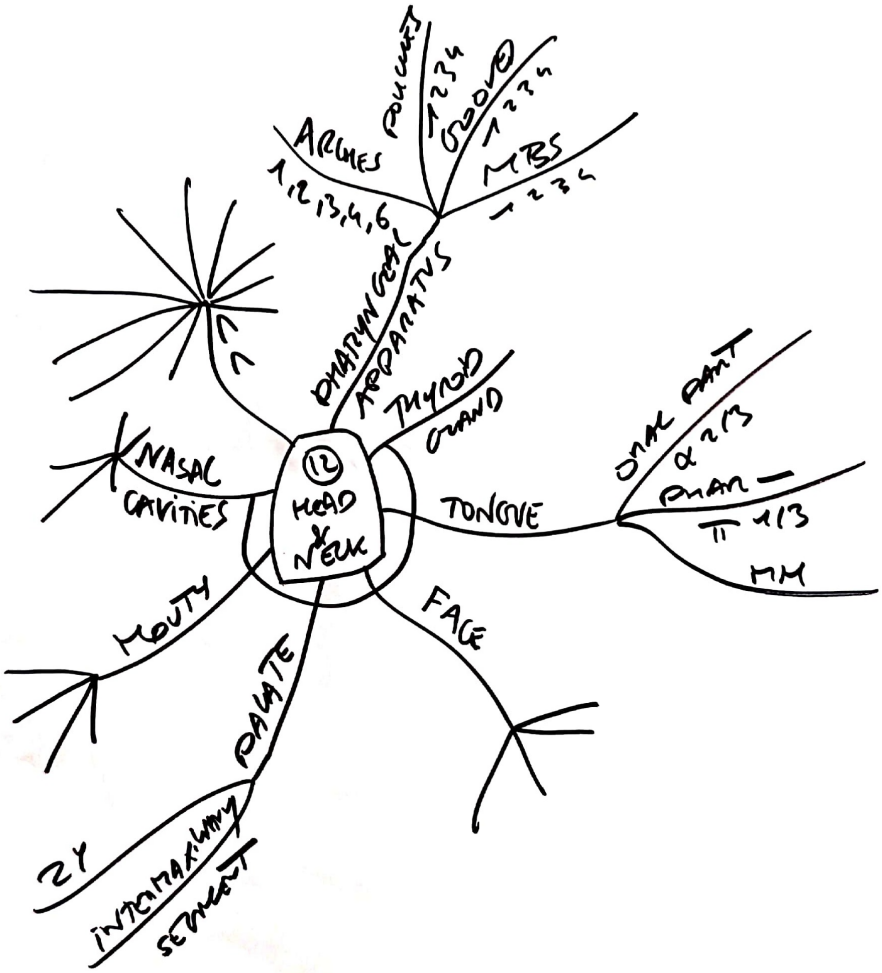

NERVOUS
CNS PNS
OVERVIEW
DVPT NEURAL TUBE
NEURAL CREST
PLACODES
NASAL
OTIC
LENS
VESICLE DVPT NT
CRANIAL
TRUNK
NEURAL CC
NF
MC
CHANGES
HISTOGENESIS NT
NEUROBLASTS
GLIOBLASTS
LAYERS
EARLY NT
VENT ZONE = SPONGIOB
INT
MARGINAL
MIGLOGLIA
ASTROCYTE
OLIGOD
EPENDYMA
TANYCYTE
CHOROID PLEXUS
SPINAL CORD
MYELENCEPHALON
ROOF
OPEN
BASAL
MOTOR
POSITIONAL
MYELINATED
FLOOR PLATE
ROOF PLATE
ALAR (SENSORY) PLATE
BASAL (MOT)
SL
SENSORY NEUROBLASTS
CEREBELLUM
CEREBRUM
CORTEX
TELENC
CS
GM
DIENC
OPT STR
HYPOTHALAMUS
METENCEPHALON
MYELENCEPHALON
SYMP NS
PARAS NS
CN
12
CHOROID PLEXUS
CONGEN MALFORMATIONS
OPTIC VESICLE
HYPOP
HYPOT
SUBT
EPIT
THAL
IV NUC
CRUS CEREBRI
BASAL PLATE MOT
ALAR PLATE
SENSORY NEUROB
SOL NUC
SPINAL NUC
CORNUA
NUC
ALAR PLATE
SENSORY NEUROBLASTS
SENSORY NEUROBLASTS

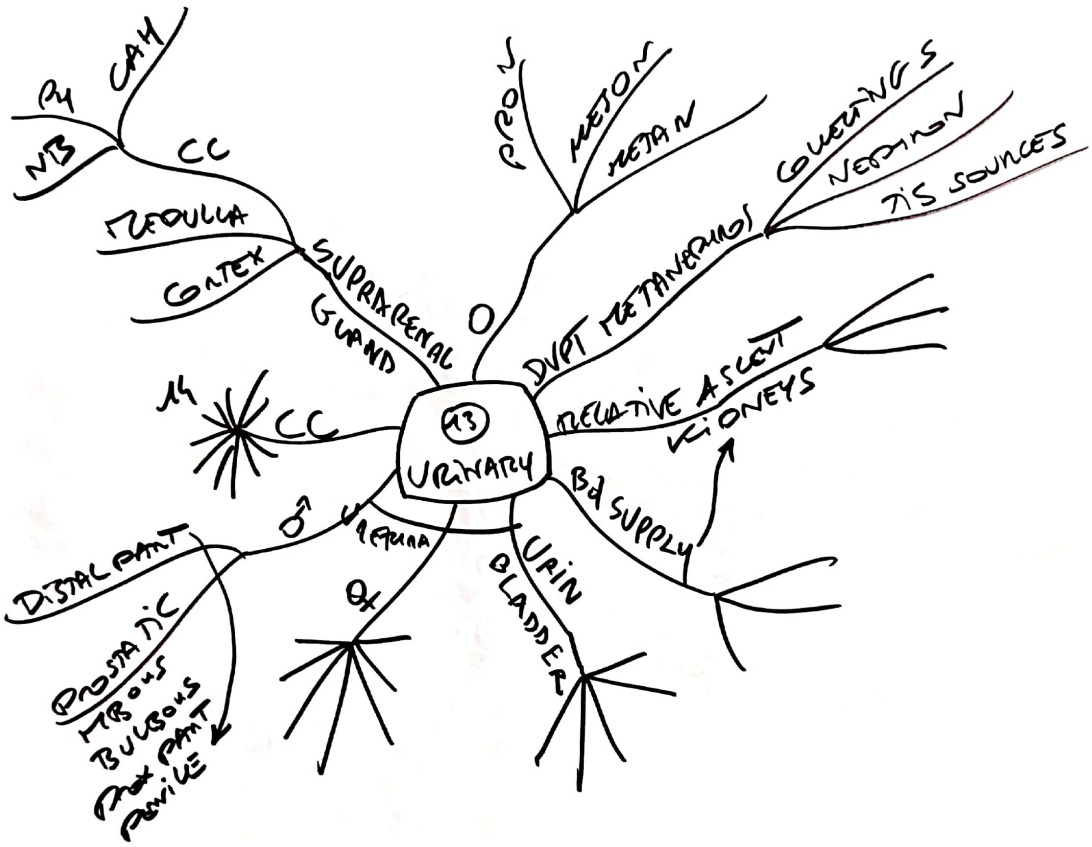

EAR
CONGENITAL MALFORMATI
ATRESIA
MICROTIA
AURICULAR
APPENDAGES
PREAURICULAR SINUS
LOW SET
SLANTED AURICLES
MINOR
GROSS
MICROTIA
GROSS DEFORMITY
OVERVIEW
INTERNAL
UNICINAL PORTION
SACCULAR
EXTERNAL
MIDDLE
OSSICLES
MEMBRANOUS
BONY LABYRINTHS

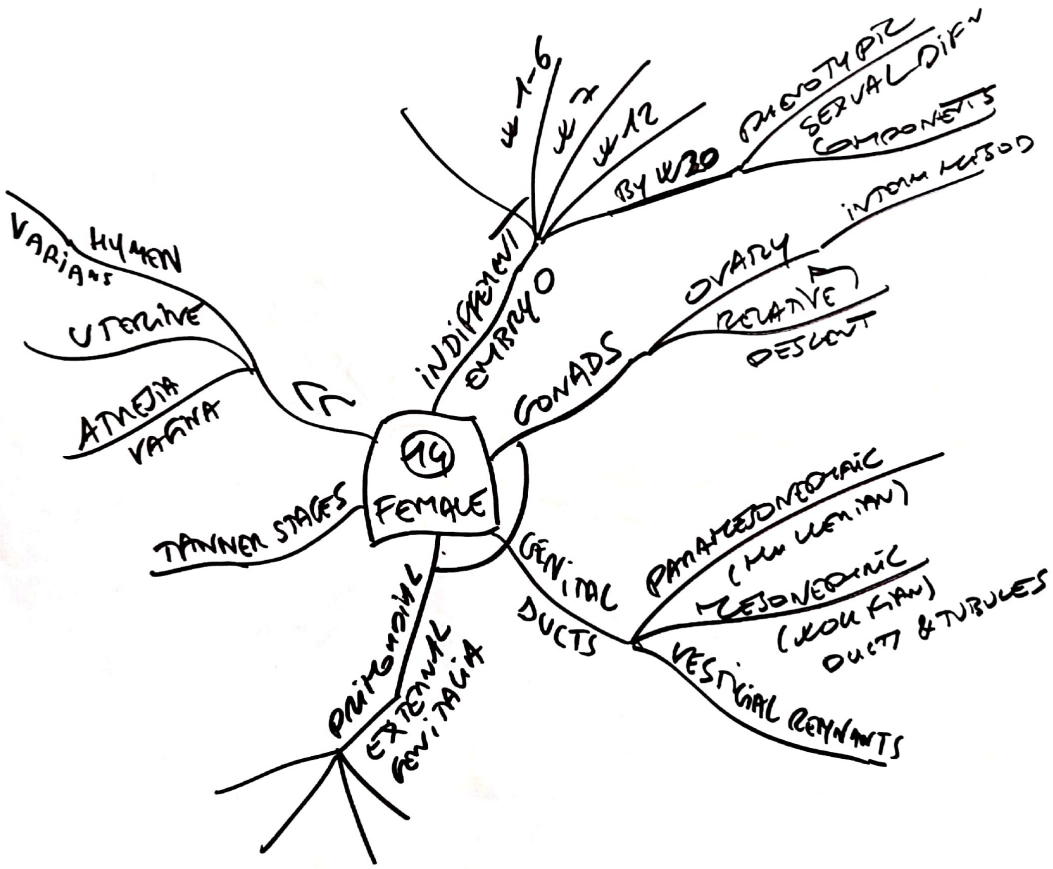

9
EYE
OPTIC VESICLE
PAX6
OPTIC CUPS
DERIVATIVES
RETINA
IRIS
CILIARY BODY
OPT STALK &
SER
OPT STRUCTURES
SCLERA
CHOROID
& CHAMBER
CORNEA
LENS
VITREOUS BODY
CANAL SCLEROTIN
EXTRAOCUL MUS
CONGENITAL MALFORMATIONS
MEN RB
ANOPH
MICROPHTH
MICROCORNEA
PERSISTENT HYPERPLASIA
MR
RETINOPATHY
RETINA
GLAUCOMA
CONGEN CATARACTS
COLOBOMA IRIS
MENDELIAN FIBROPLASIA
PAPILLOPATHY
RP

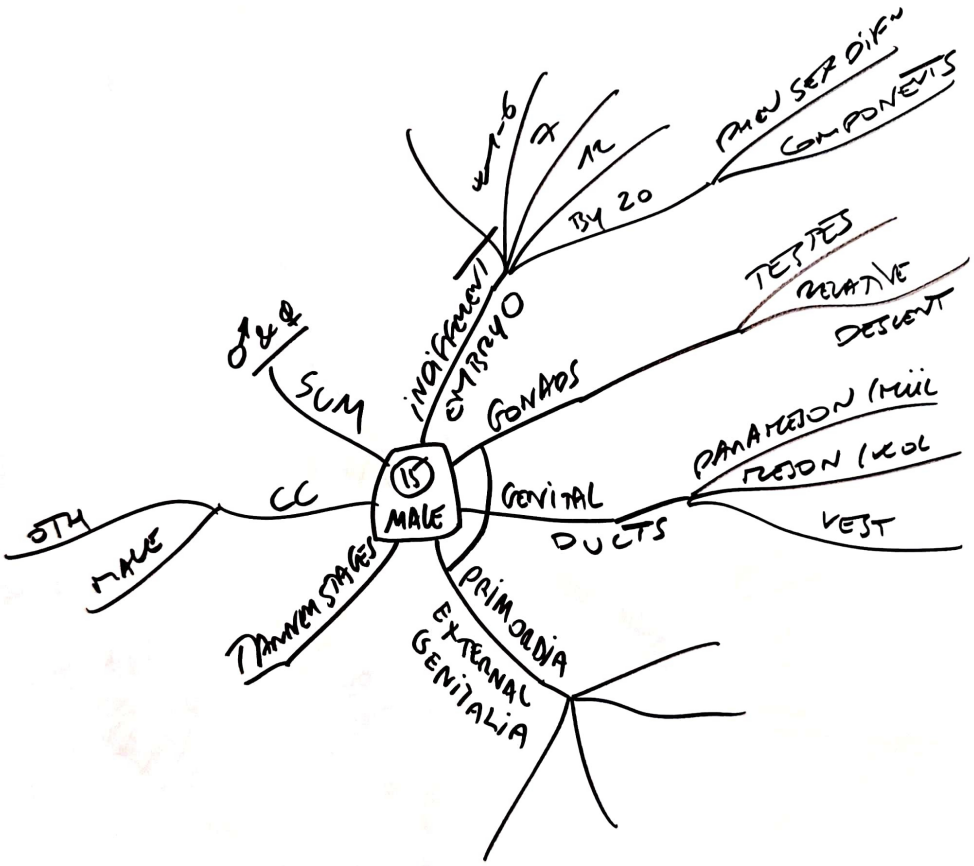

10
DIGESTIVE
MESENTERIES
OVERVIEW
FORE GUT
ESOPHAGUS
DVD
SOUNDS
CC
STOM
HPS
LIVER
GALLBLADDER
EXTRAHEP BD
PANCREAS
UPPER DUOD
LOWER ↑
DES ILEUM ILEUM, APPENDIX
ASCENDING COLON
& PROX 1/3
TRANSVERSE COLON
MIDGUT
DERIVATIVES
HINDGUT
DISTAL 1/3 TRANS/COL
DESC COLON
SIGMOID COL
RECTUM &
UPPER ANAL CANAL
ANAL CANAL

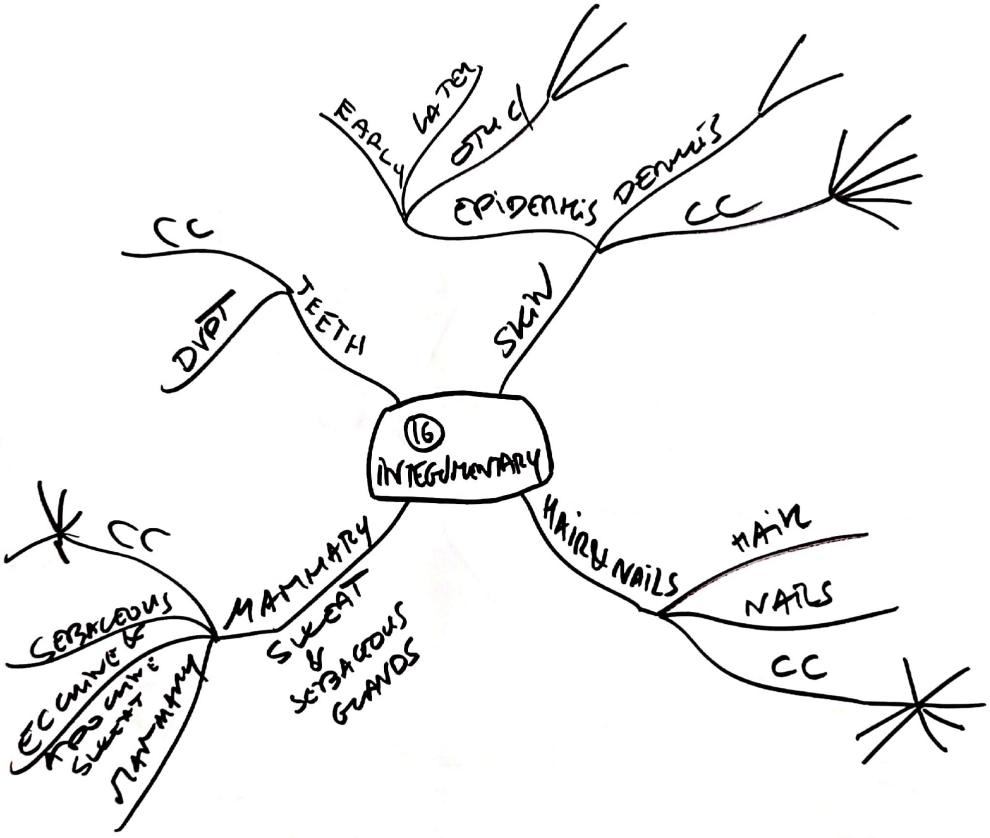

11
RESPIRATORY
UPPER
LOWER
LARYNX
TRACHEA
S
CC
BRONCHI
STAGES
SOUNDS
CC
LUNGS
CC
PERIODS

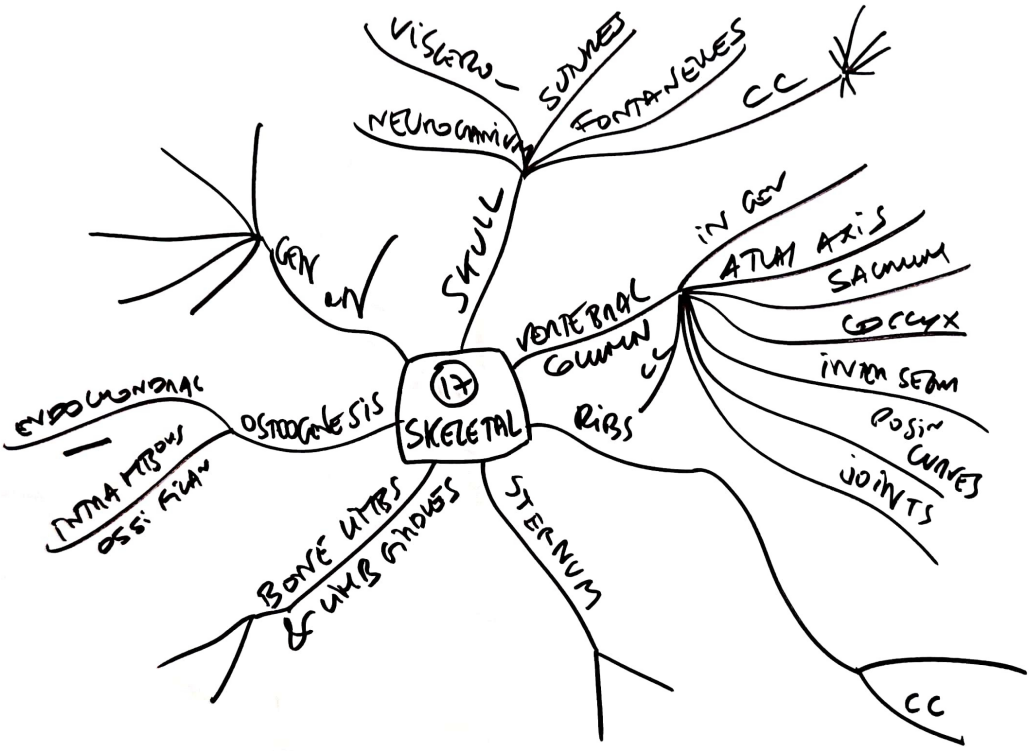

12
HEAD & NECK
PHARYNGEAL APPARATUS
ARCHES
1,2,3,4,6
POUCHES
1 2 3 4
GROOVES
1 2 3 4
MEBS
1 2 3 4
THYROID GLAND
TONGUE
ORAL PART
α 2/3
PHAR —
π 1/3
MM
FACE
PALATE
INTERMAXILLARY SEGMENT
2Y
MOUTH
NASAL CAVITIES
V

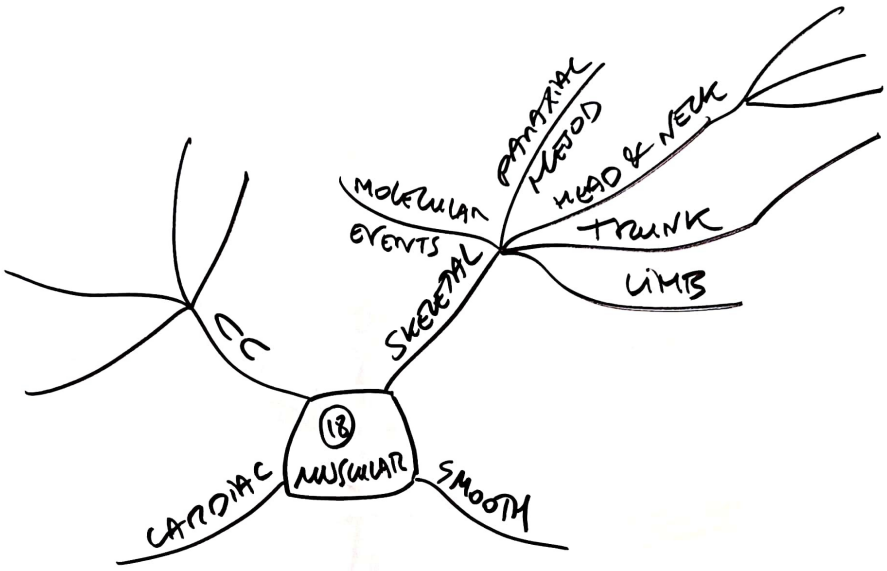

13
URINARY
SUPRARENAL GLAND
CORTEX
MEDULLA
CC
NB
CAH
PRO
METON
METAN
DUCT METANEPHROS
COLLECTING S
NEPHRON
TIS SOURCES
RELATIVE ASCENT KIDNEYS
BLD SUPPLY
URIN BLADDER
URETHRA
DISTAL PART
PROSTATIC
MEMBRANOUS
BULBOUS
PART PENILE
CC

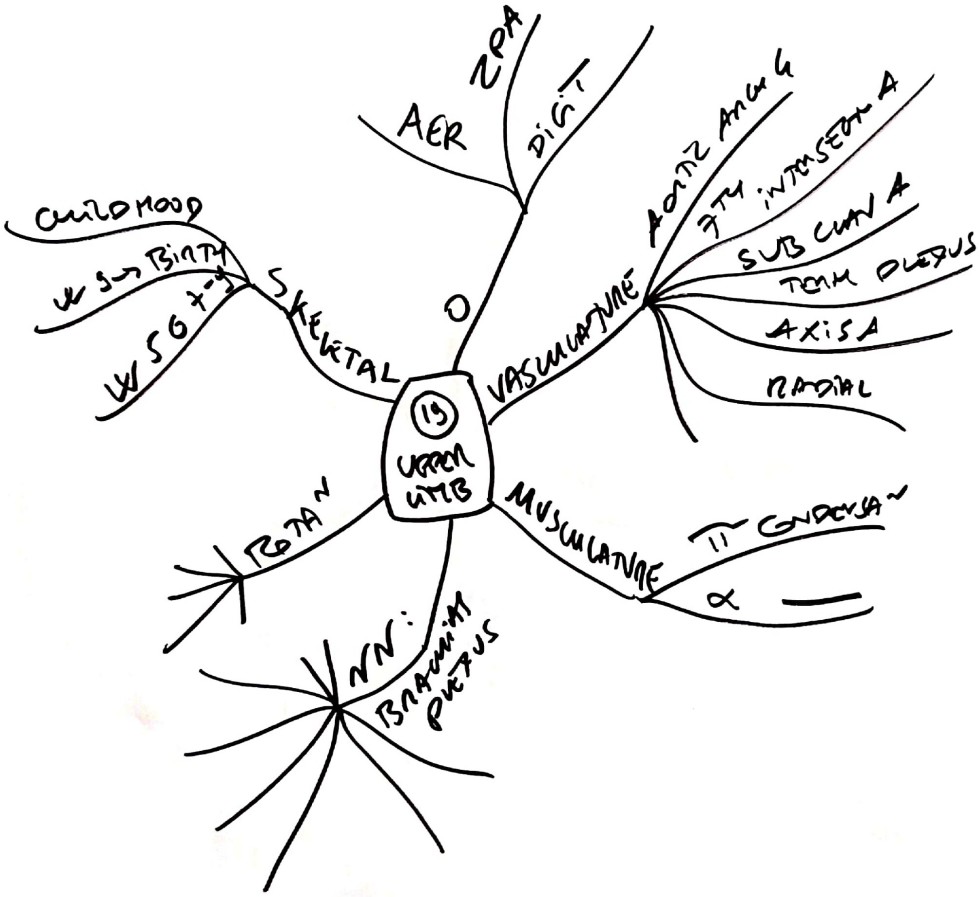

FEMALE
INDIFFERENT EMBRYO
WK 1-6
WK 7
WK 12
BY WK 20
PHENOTYPIC SEXUAL DIFF COMPONENTS
INTERNAL METHOD
GONADS
OVARY
RELATIVE DESCENT
GENITAL DUCTS
PARAMESONEPHRIC (HUMAN MULLERIAN)
MESONEPHRIC (HUMAN WOLFFIAN) DUCTS & TUBULES
VESTIGIAL REMNANTS
PRIMORDIAL EXTERNAL GENITALIA
TANNER STAGES
VARIANTS
HYMEN
UTERINE
ATRESIA VAGINA

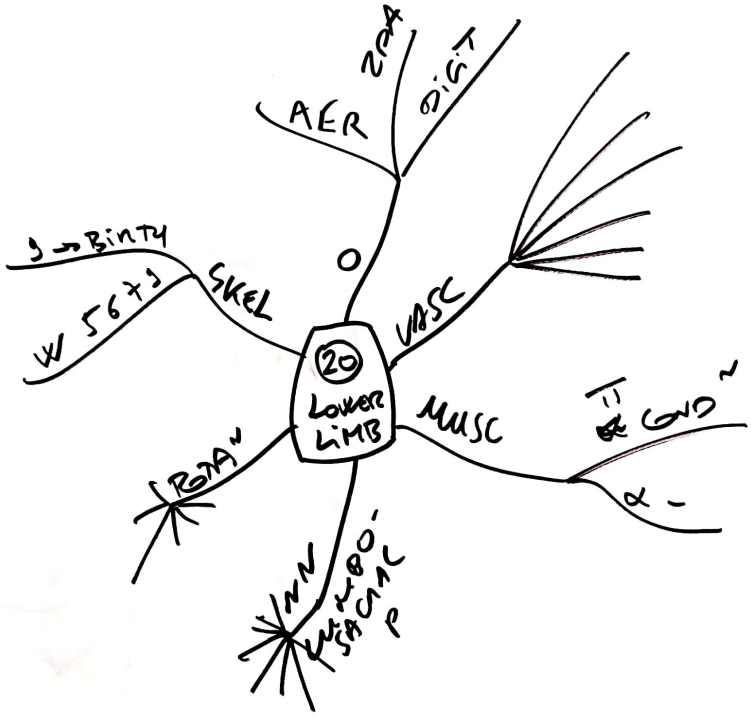

15
MALE
INDIFFERENT EMBRYO
4-6
7
12
BY 20
PROG SEX DIFF
COMPONENTS
GONADS
TESTES
RELATIVE
DESCENT
GENITAL
DUCTS
PARAMESON (MUL
MESON (WOL
VEST
PRIMORDIA
EXTERNAL
GENITALIA
TRANSVERSE
SUM
♂ & ♀
CC
5TH
MALE

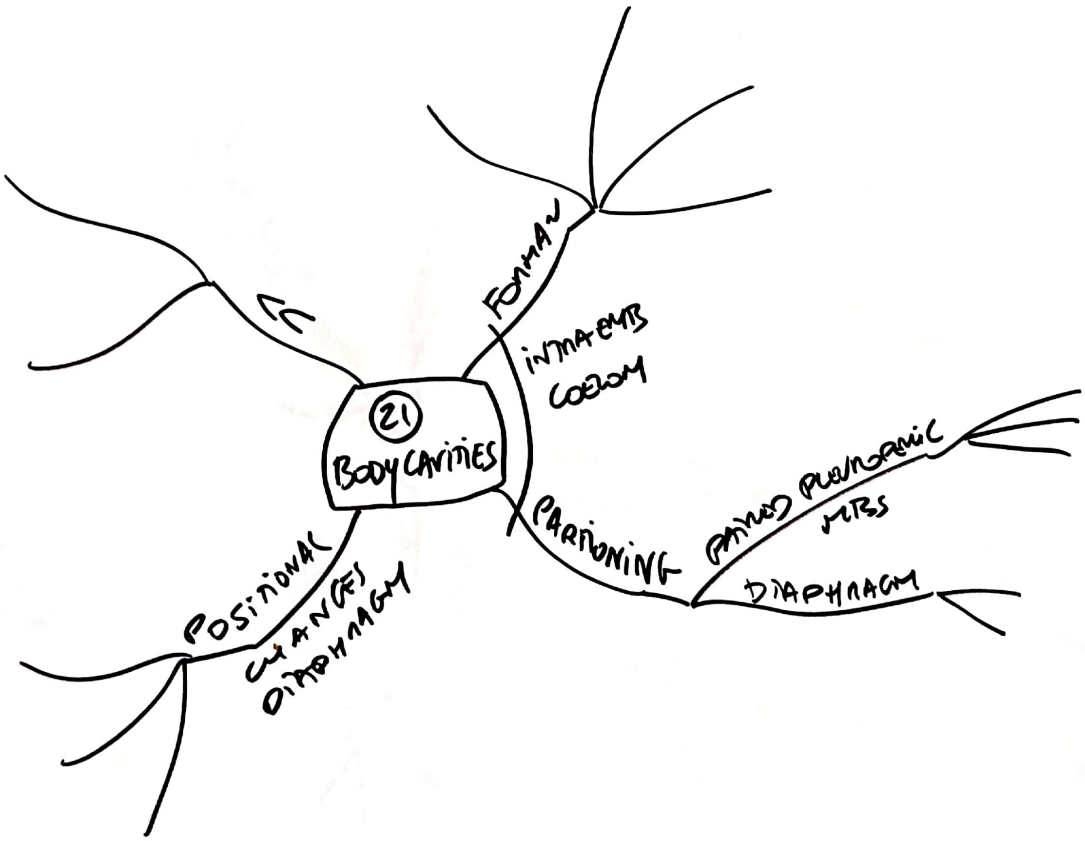

16
INTEGUMENTARY
SKIN
EPIDERMIS DERMIS
EARLY
LATER
STUDY
CC
TEETH
CC
DVPT
HAIR & NAILS
HAIR
NAILS
CC
MAMMARY
SWEAT & SEBACEOUS GLANDS
SEBACEOUS
ECCRINE & APOCRINE SWEAT
MAMMARY
CC

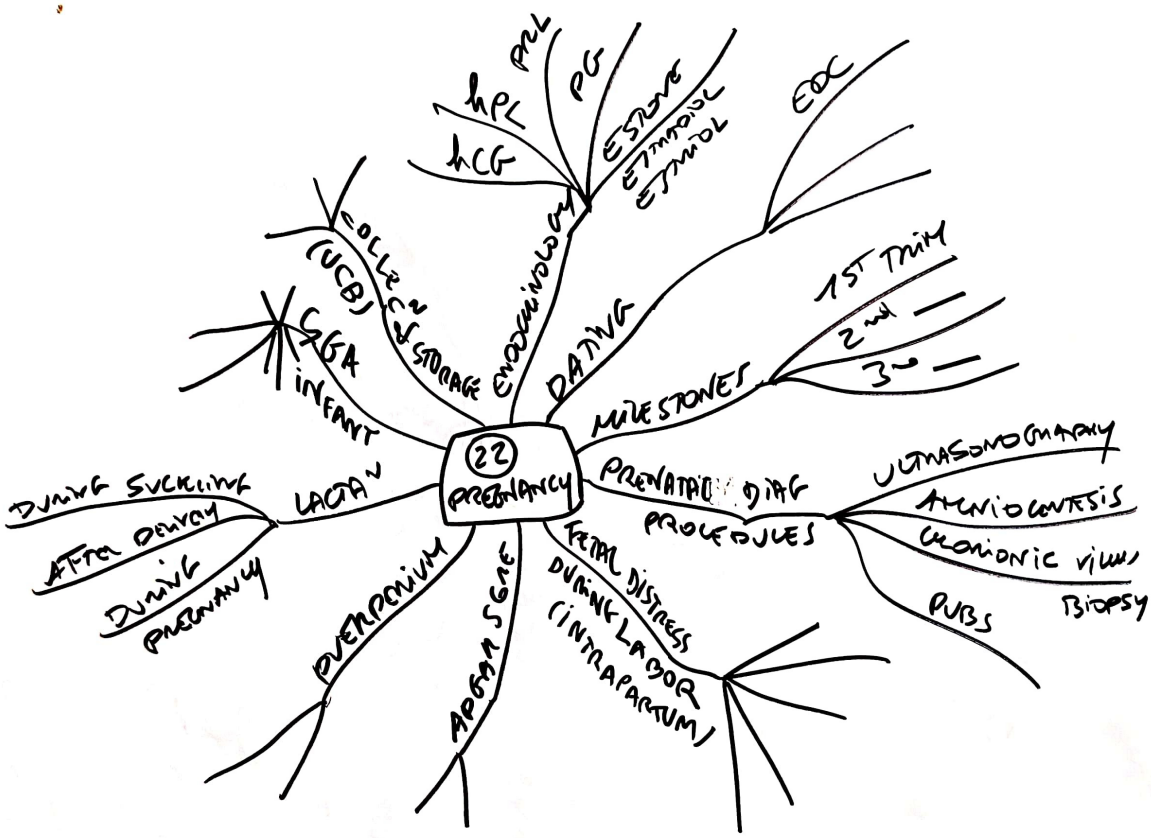

17
SKELETAL
SKULL
VISCERO-
SUTURES
NEUROCRANIUM
FONTANELLES
CC
VERTEBRAL COLUMN
IN GEN
ATLAS AXIS
SACRUM
COCCYX
INTER SEGM
POSTN CURVES
JOINTS
CC
RIBS
STERNUM
CC
BONE LIMBS
& LIMB GIRDLES
OSTEOGENESIS
ENDOCHONDRAL
INTRAMEMBRANOUS
OSSIFICATION
GEN
CC

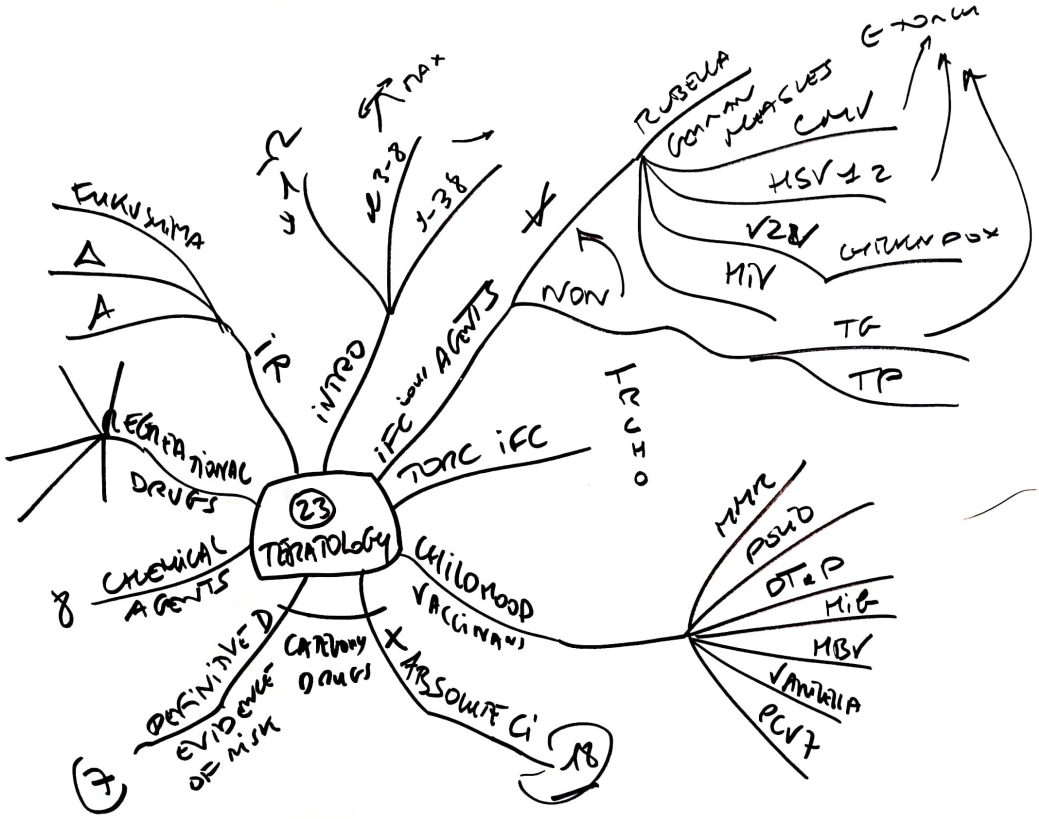

18
MUSCULAR
CARDIAC
SMOOTH
CC
SKELETAL
MOLECULAR
EVENTS
PARAXIAL
MESOD
HEAD & NECK
TRUNK
LIMB


19
UPPER LIMB
SKELETAL
CHILDHOOD
BIRTH
VASCULATURE
AORTIC ARCH
SUBCLAVIA
TRUNK PLEXUS
AXILLA
RADIAL
MUSCULATURE
GUIDELINE
DIGIT
AER
ROTATION
NN:
BRACHIAL PLEXUS


20
LOWER LIMB
AER
ZPA
DIGIT
VASC
MUSC
SKEL
BINTY
ROTAN
NN


21
BODY CAVITIES
FORMAN
INTRAEMB
COELOM
PARTIONING
PAIRED PLEURAPERIC
MEBS
DIAPHRAGM
POSITIONAL
CHANGES
DIAPHRAGM


22
PREGNANCY
DATING
hCG
hPL
PRL
PG
ESTRONE
ESTRADIOL
ESTRIOL
EDC
MILESTONES
1ST TRIM
2nd —
3rd —
PRENATAL DIAG
PROCEDURES
ULTRASONOGRAPHY
AMNIOCENTESIS
CHORIONIC VILLUS
BIOPSY
PUBS
FETAL DISTRESS
DURING LABOR
(INTRAPARTUM)
APGAR SCORE
PUERPERIUM
LACTATION
DURING SUCKLING
AFTER DELIVERY
DURING
PREGNANCY
SGA
INFANT
COLLECT & STORAGE
(UCB)


23
TERATOLOGY
FUKUSHIMA
LEGITIMATIONAL DRUGS
CHEMICAL AGENTS
DEFINITIVE EVIDENCE OF RISK
7
CATEGORY D DRUGS
X ABSOLUTE CI
18
CHILDHOOD VACCINATIONS
MMR
PSLTD
DTaP
HiB
HBV
VARICELLA
PCV7
TOXIC IFC
TRUTH
IFC
INTRO
IR
NON
RUBELLA
GERMAN MEASLES
CMV
HSV 1 2
VZV
HIV
CHICKEN POX
TG
TP
EXTRACT