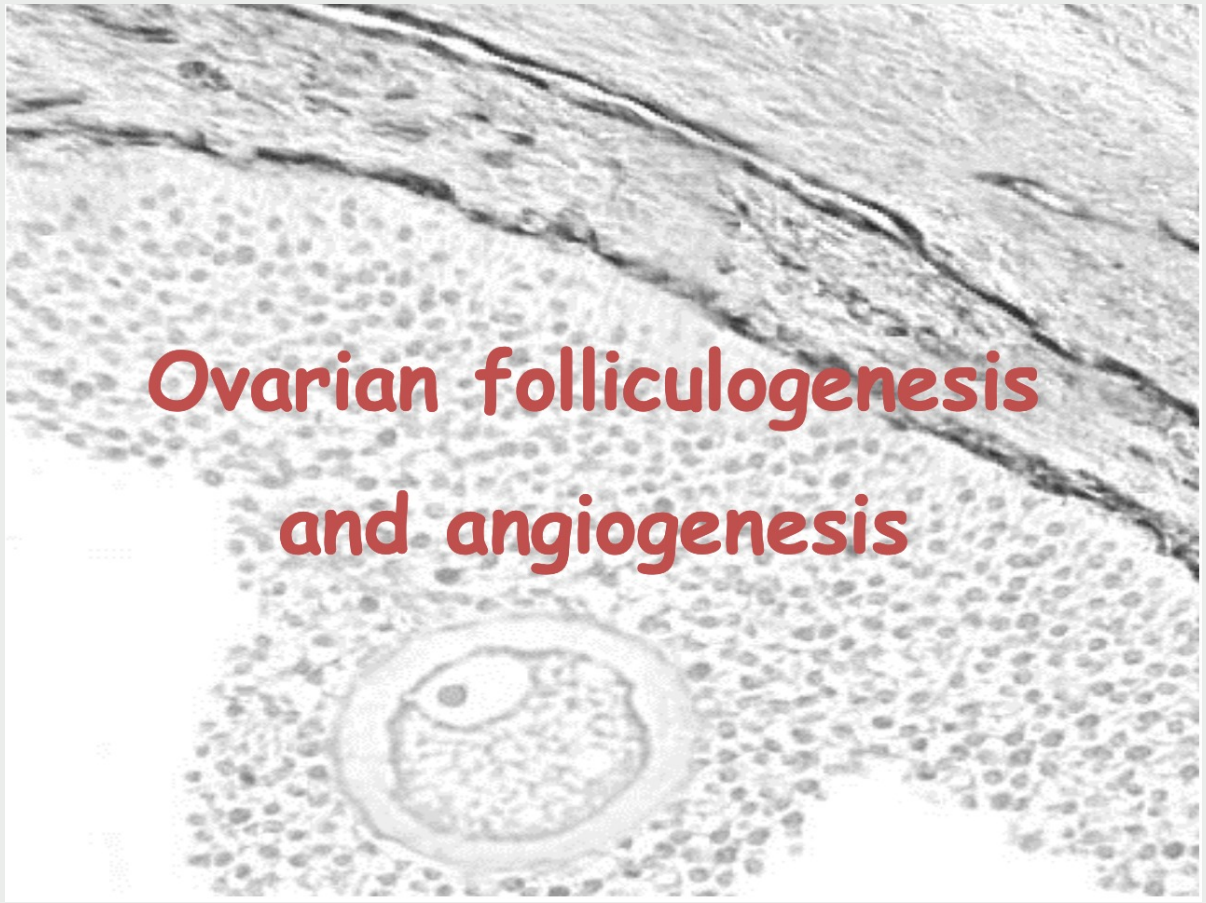
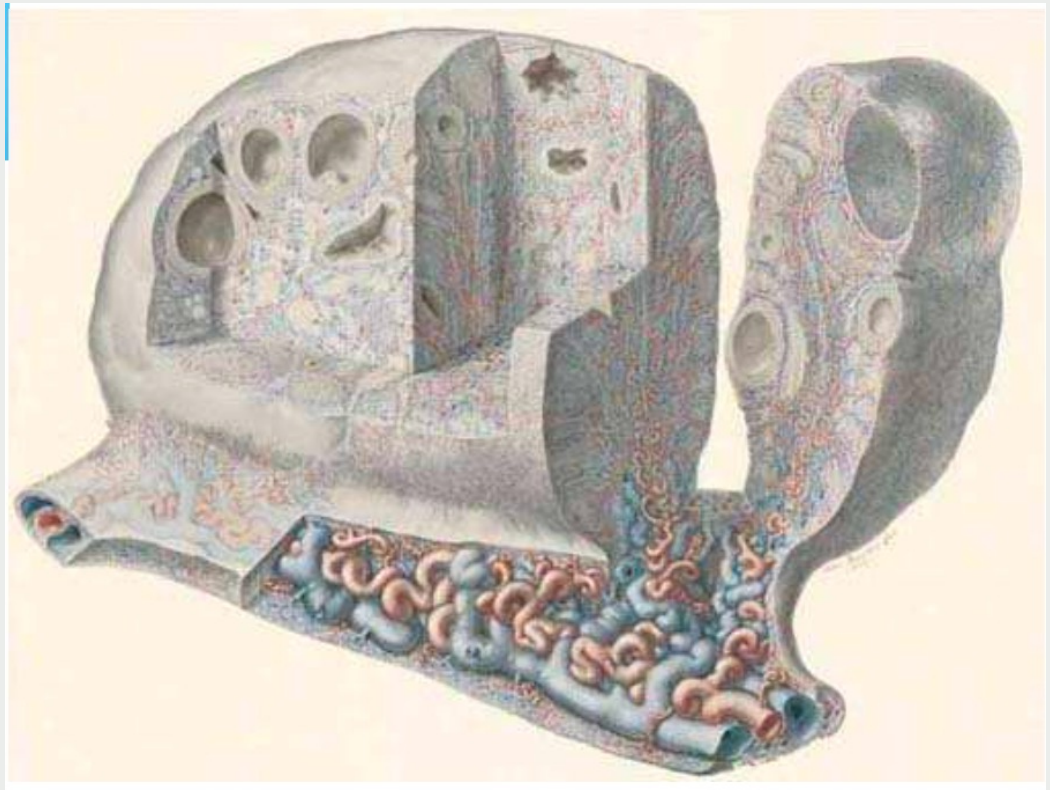
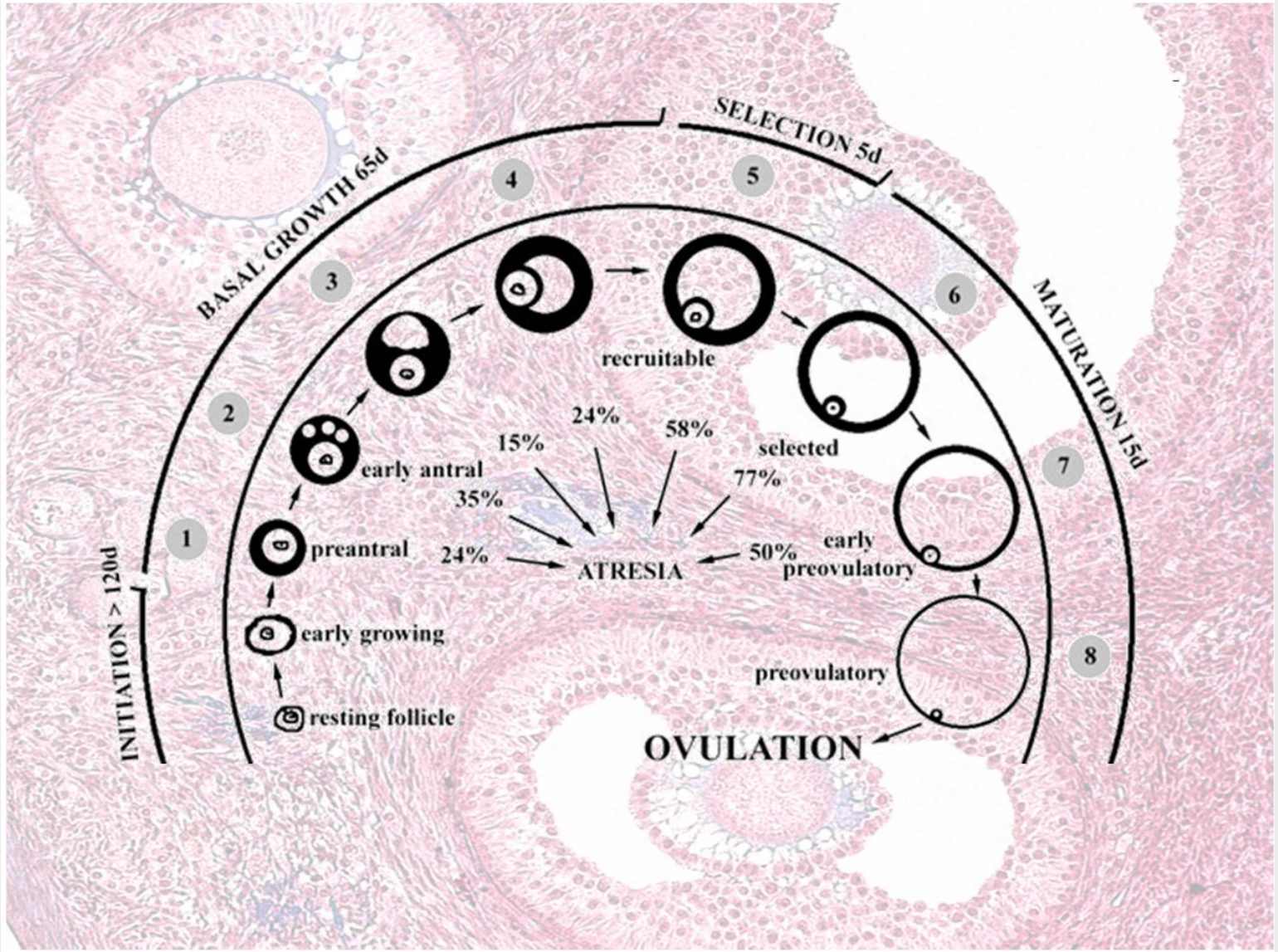
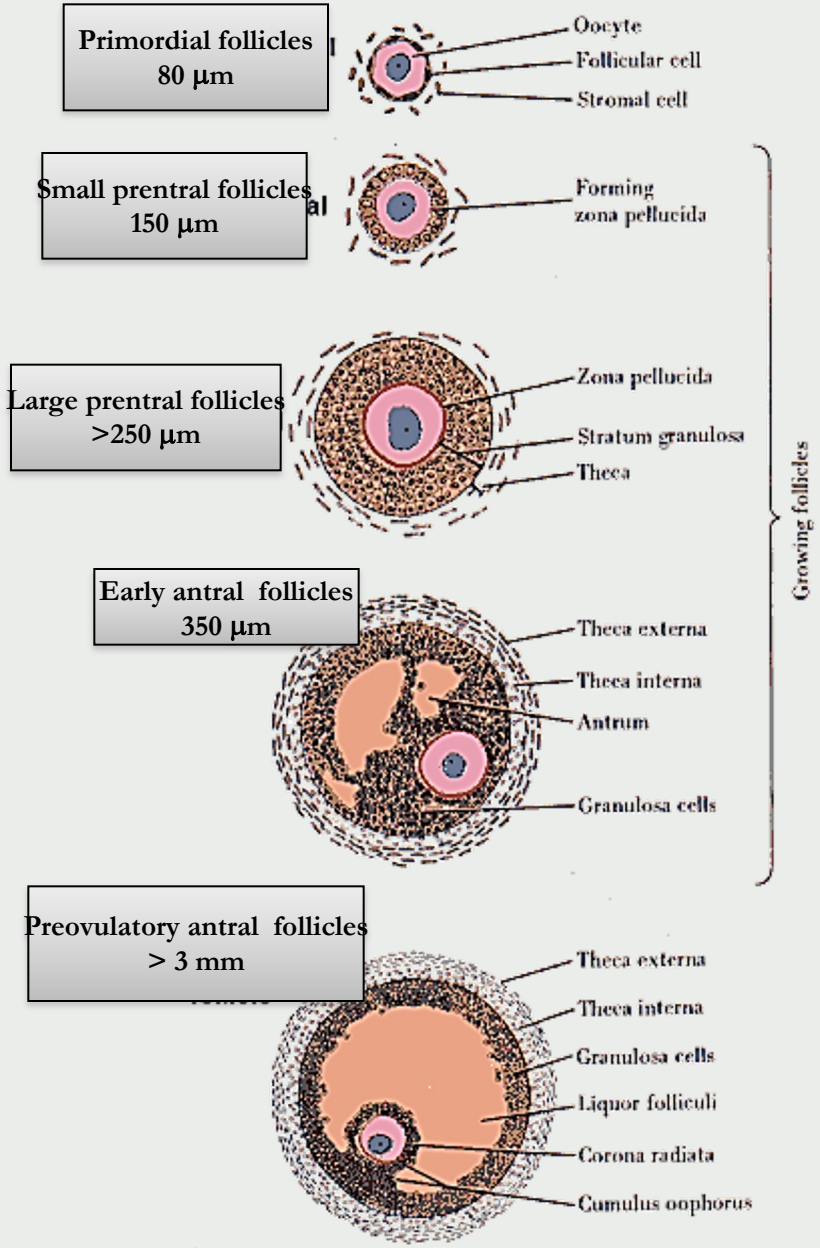

Ovarian folliculogenesis
and angiogenesis

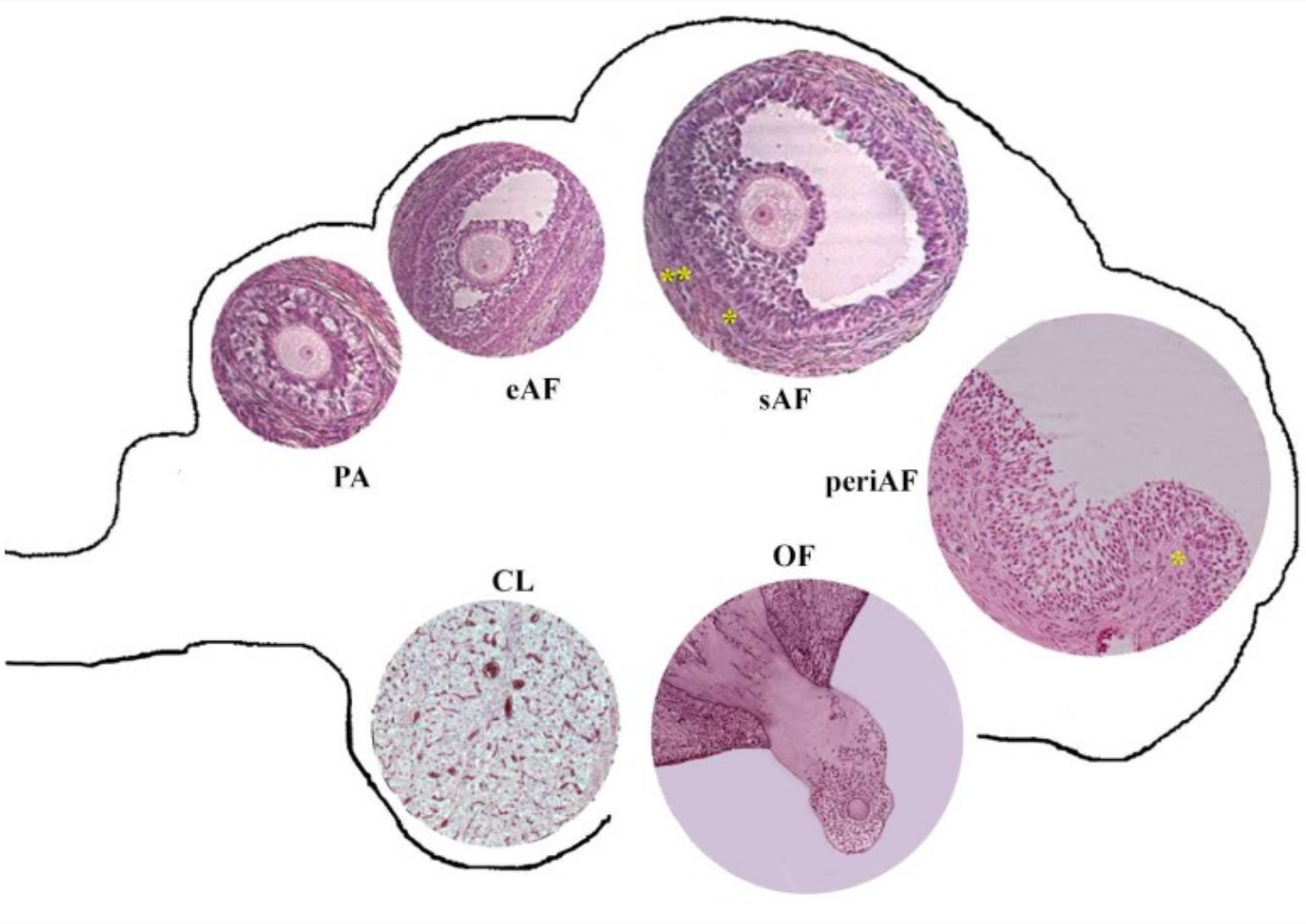


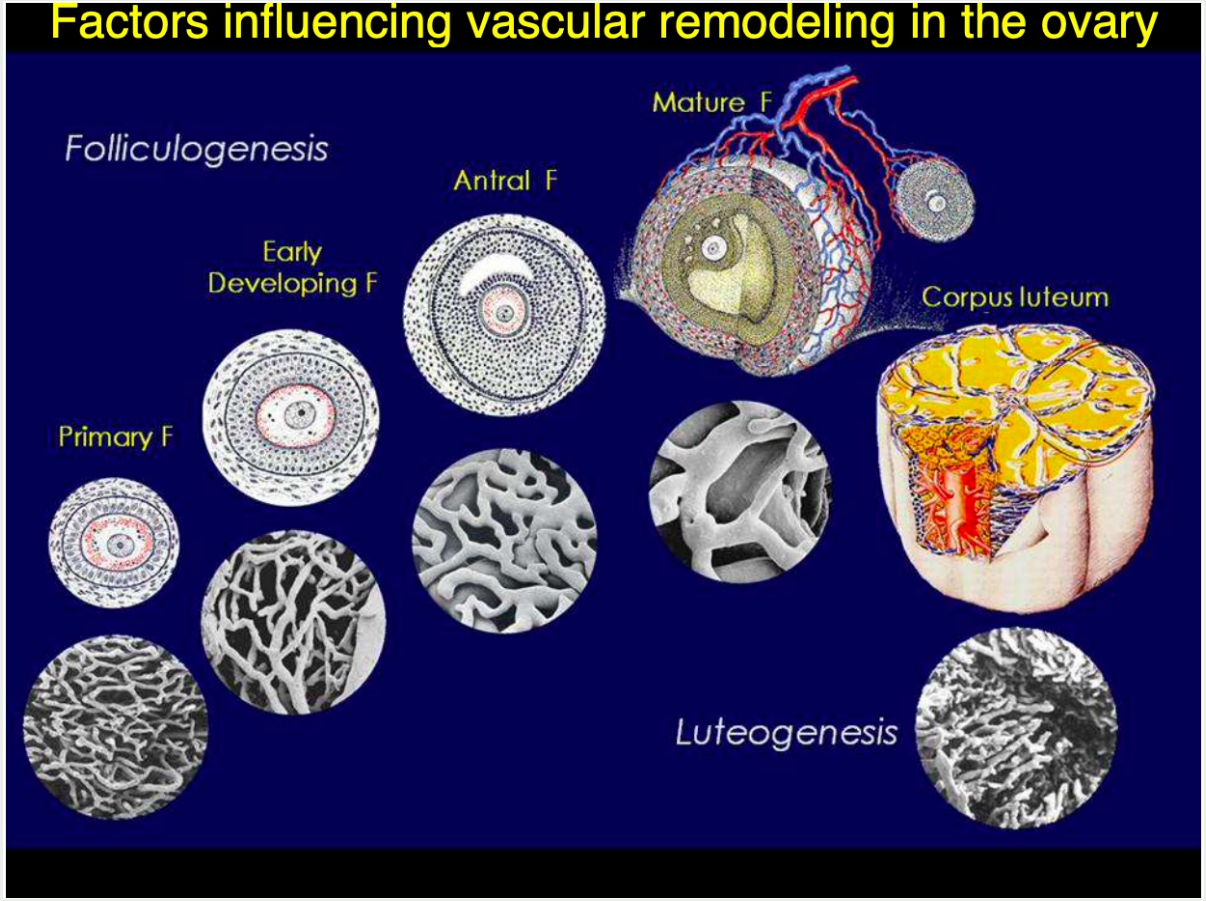

SELECTION 5d
BASAL GROWTH 65d
MATURATION 15d
INITIATION > 120d
1
2
3
4
5
6
7
8
recruitable
selected
early antral
preantral
early growing
resting follicle
15%
24%
58%
77%
35%
24%
50%
ATRESIA
early preovulatory
preovulatory
OVULATION

OVARIAN FOLLICLES

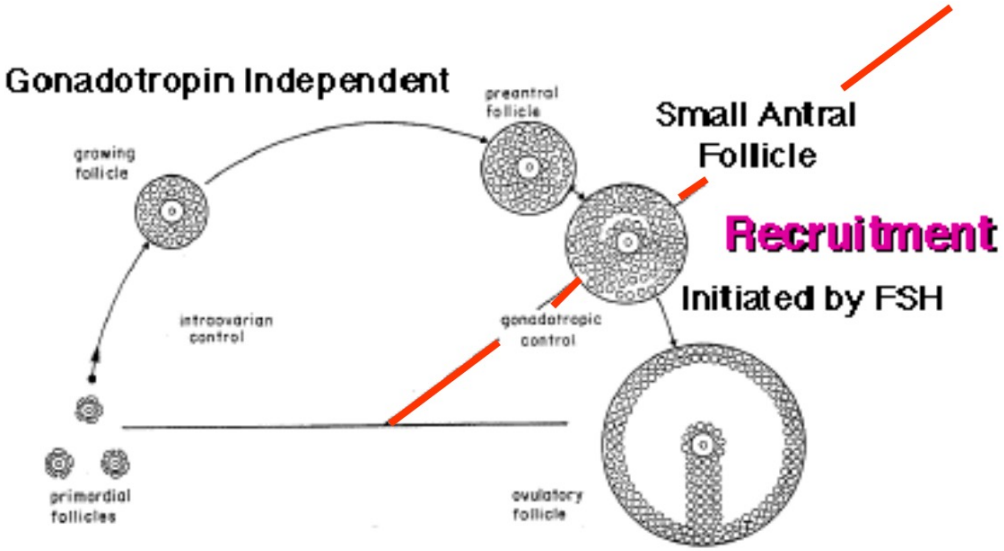


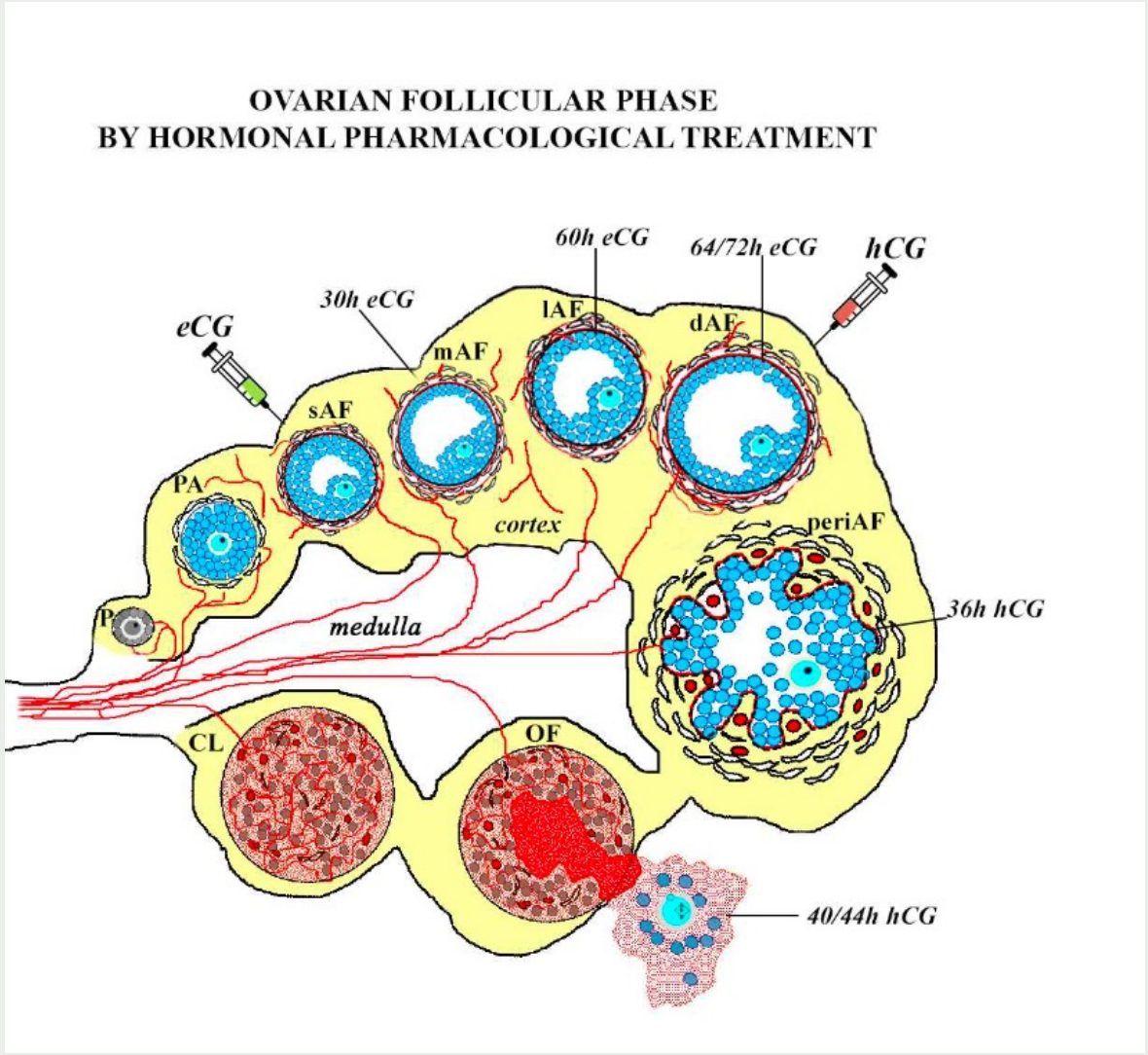
OVARIAN FOLLICLE MORPHOLOGY AND DEVELOPMENT

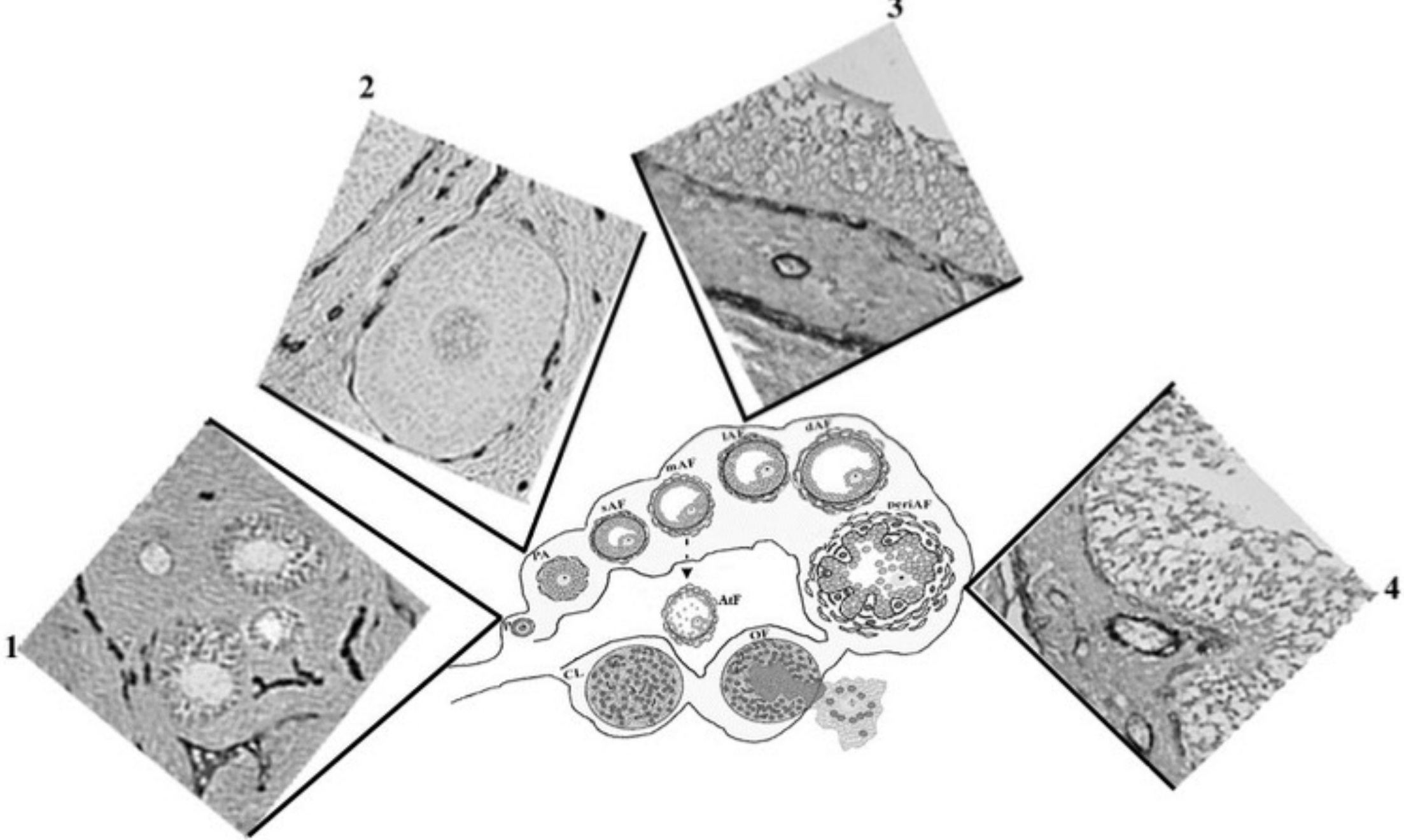



Factors influencing vascular remodeling in the ovary
Folliculogenesis
Primary F
Early
Developing F
Antral F
Mature F
Corpus luteum
Luteogenesis

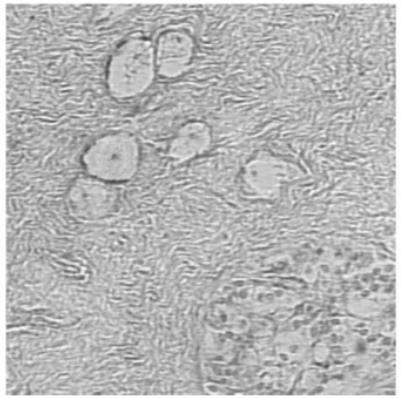
Follicular Growth

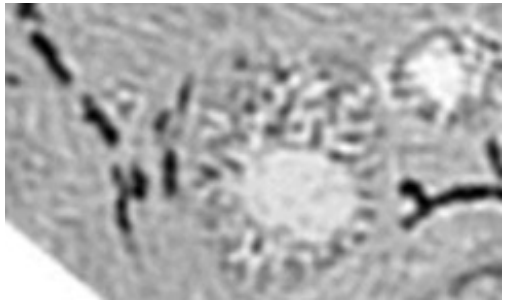



OVARIAN FOLLICULAR PHASE
BY HORMONAL PHARMACOLOGICAL TREATMENT
60h eCG
64/72h eCG
hCG
30h eCG
eCG
lAF
dAF
mAF
sAF
PA
cortex
periAF
P
medulla
36h hCG
CL
OF
40/44h hCG

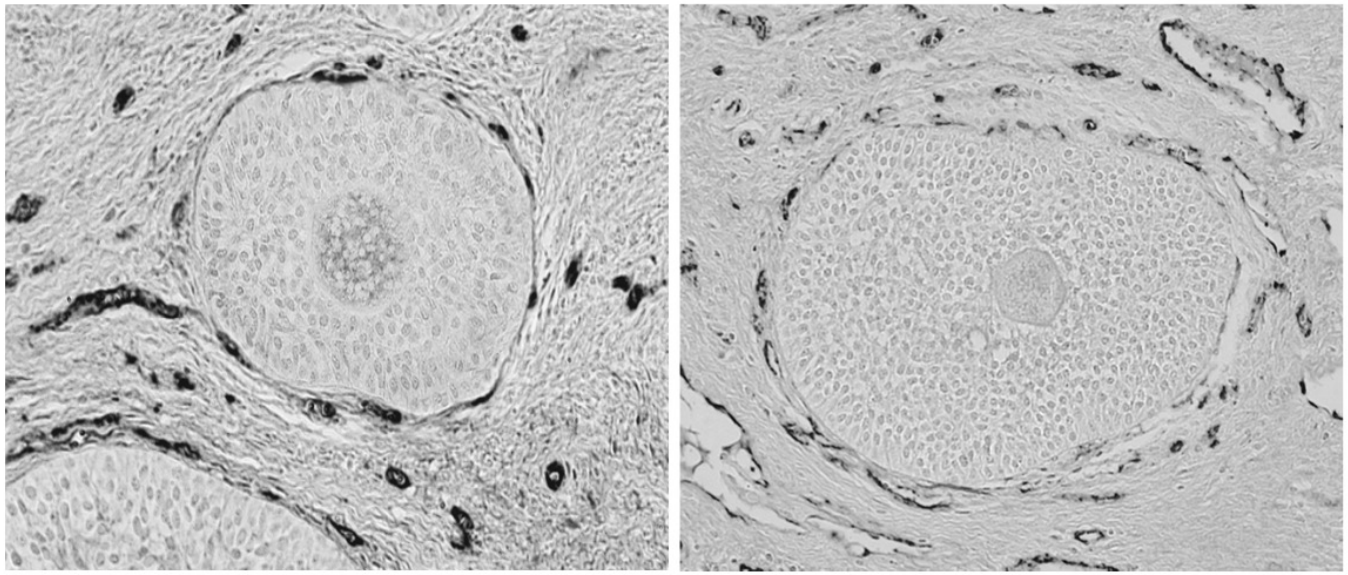

1
2
3
4
PA
sAF
mAF
lAF
dAF
PrfAF
AtF
OE
CL

Primordial and Primary follicle blood supply

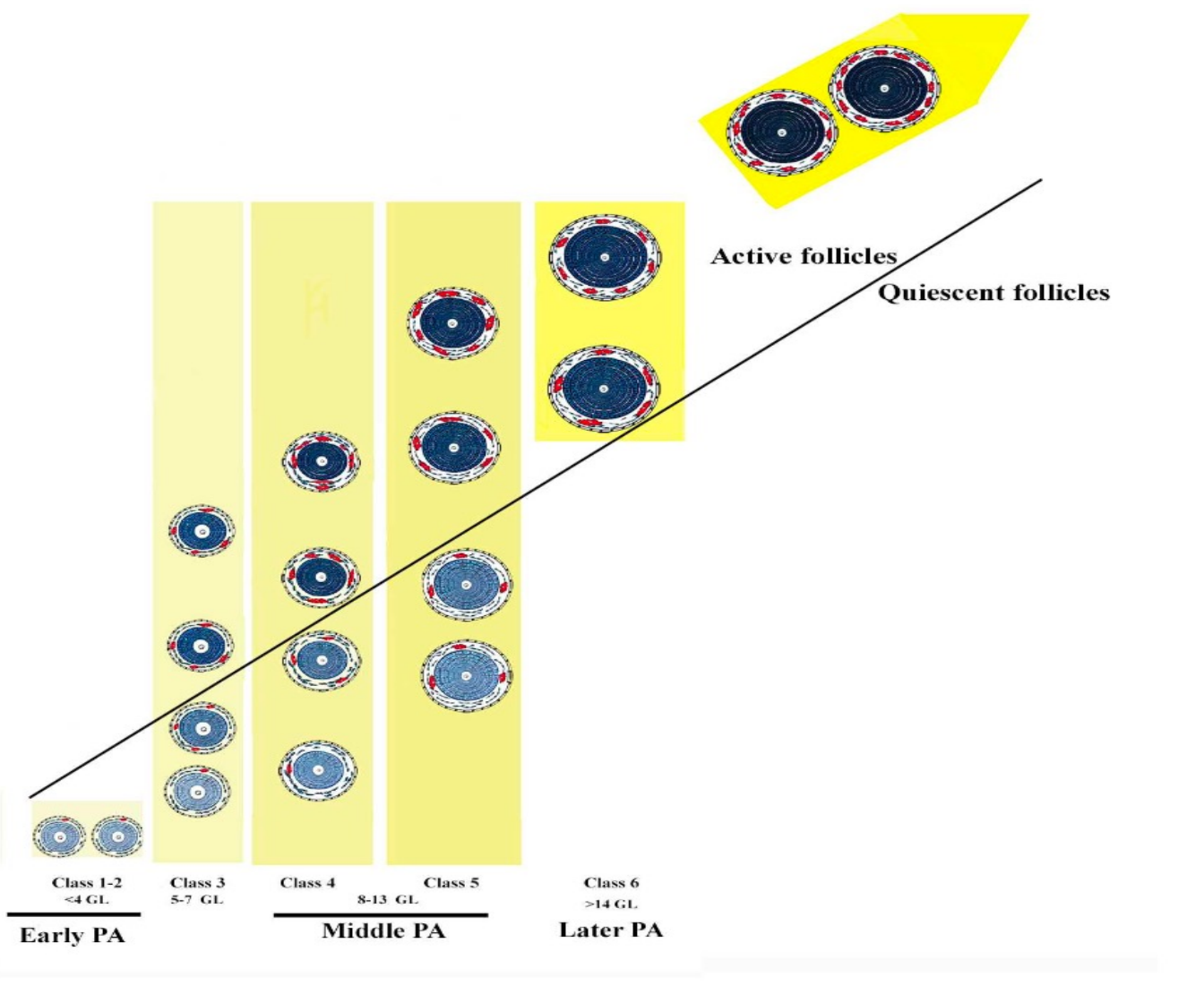




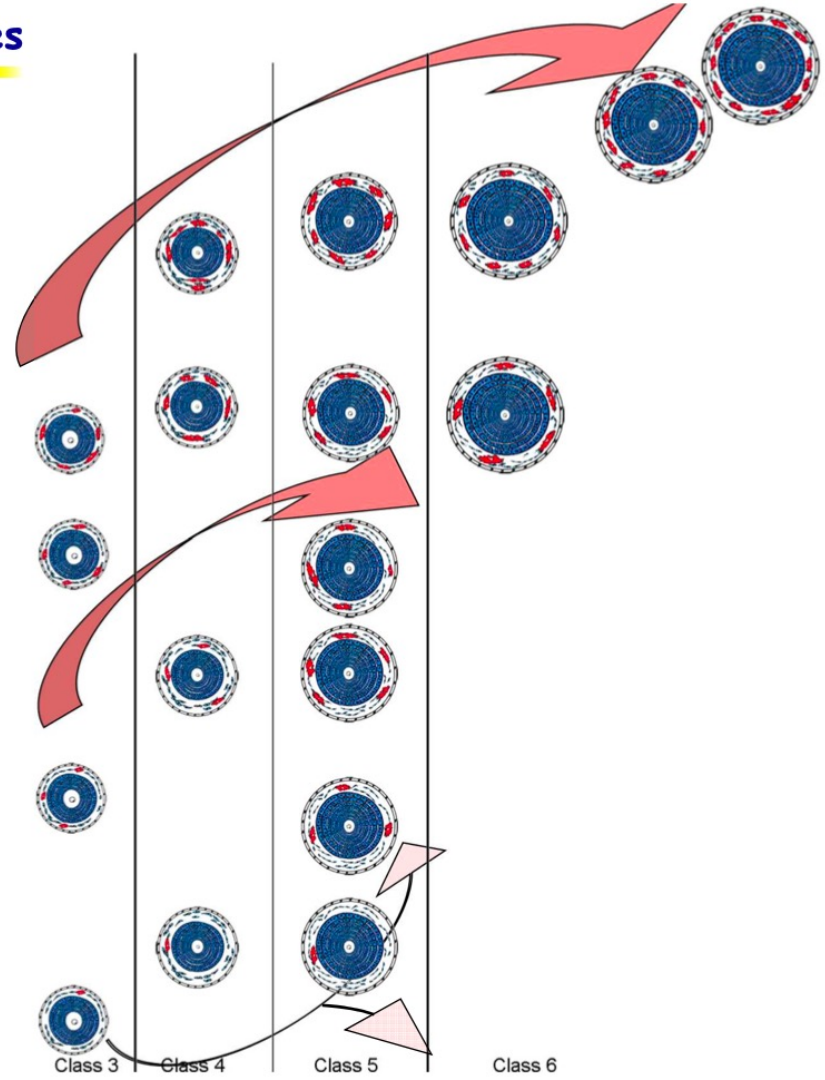
Preantral follicle blood supply



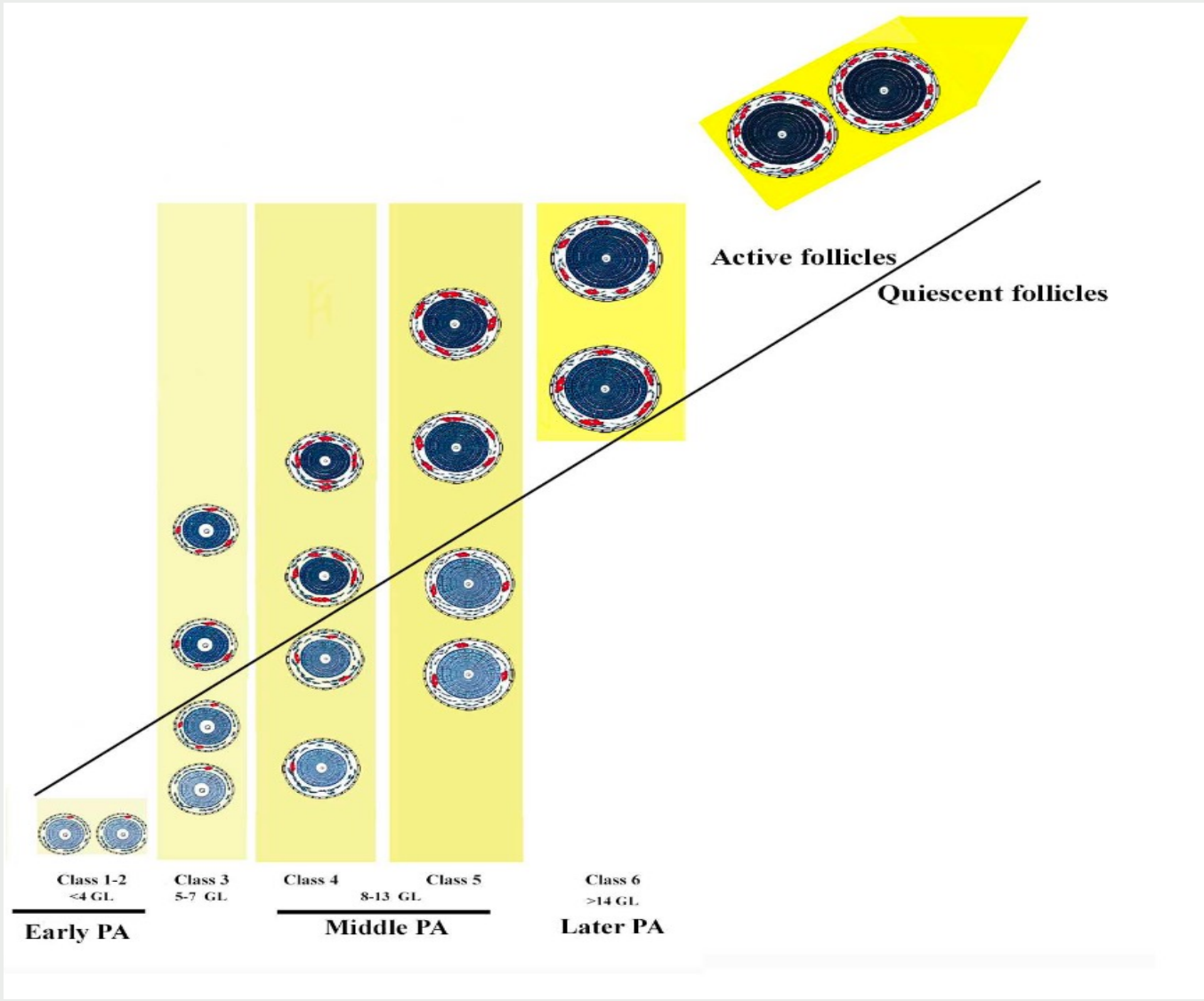
Preantral follicle classification

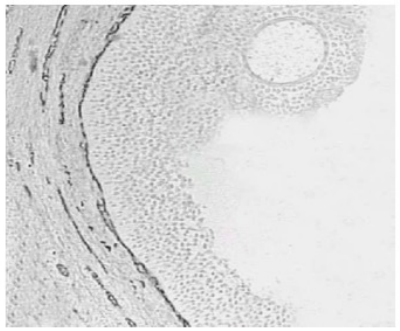


Preantral follicles

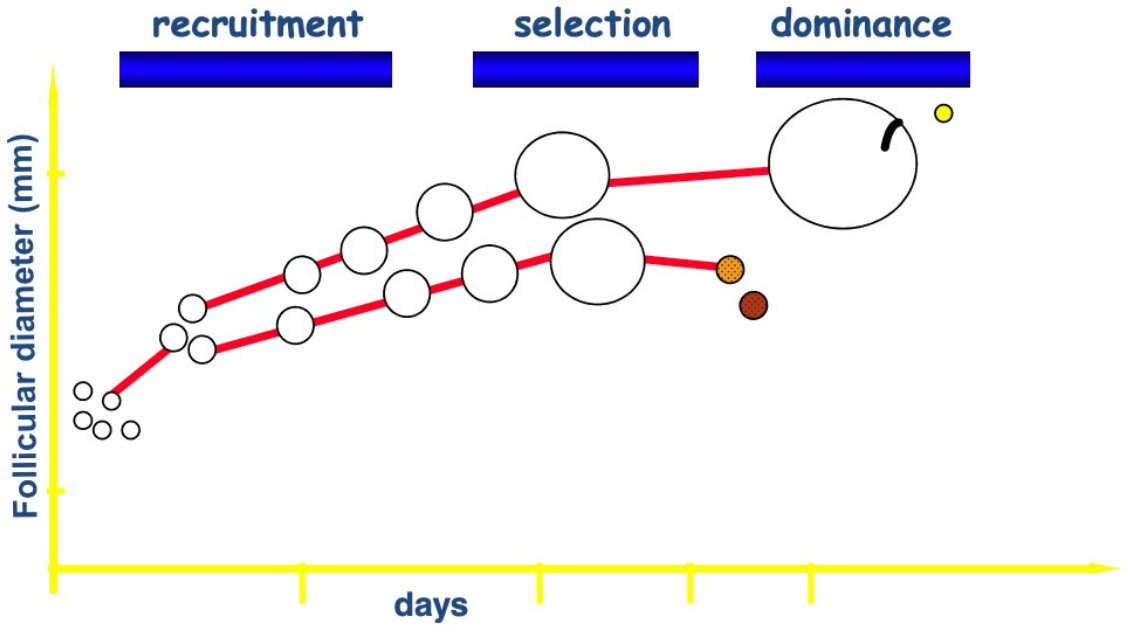


PI= proliferation index
VEGF
mRNA VEGF
VA= vascular area

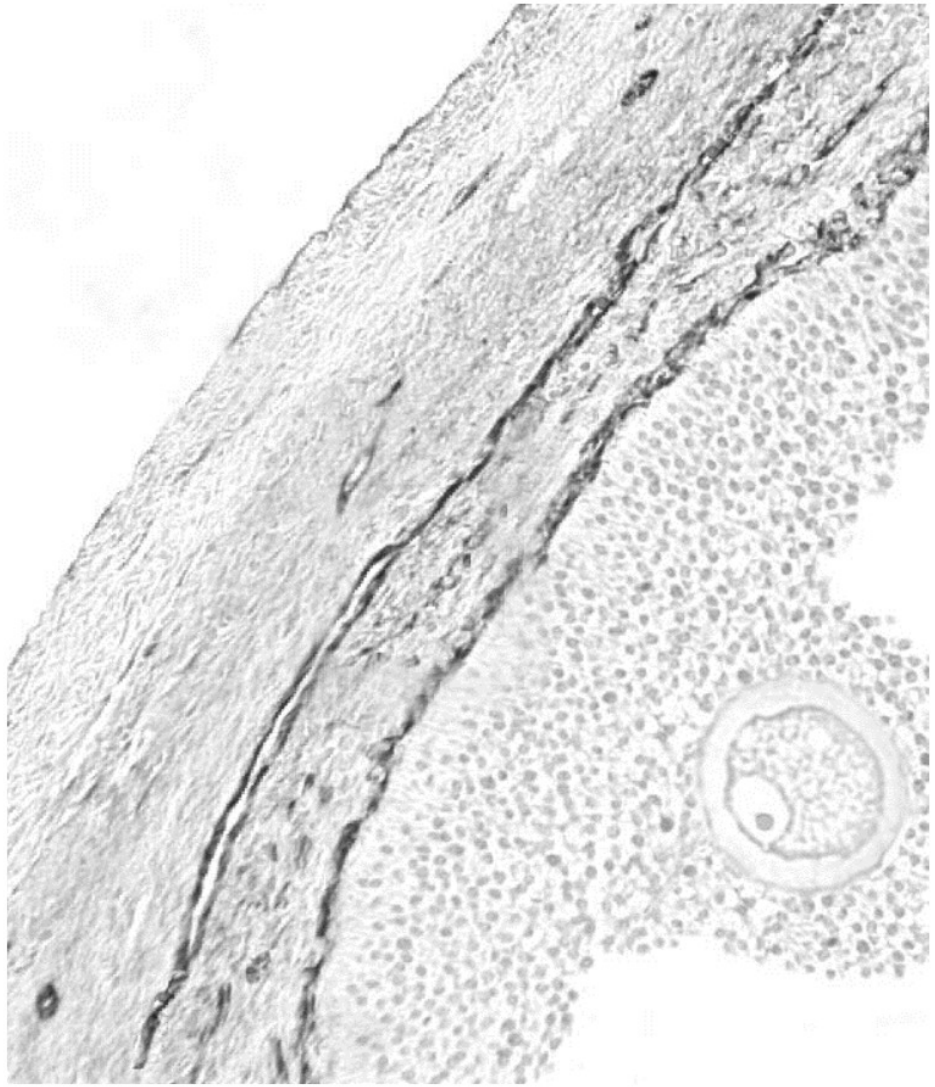

Active follicles
Quiescent follicles
Class 1-2
<4 GL
Class 3
5-7 GL
Class 4
Class 5
8-13 GL
Class 6
>14 GL
Early PA
Middle PA
Later PA

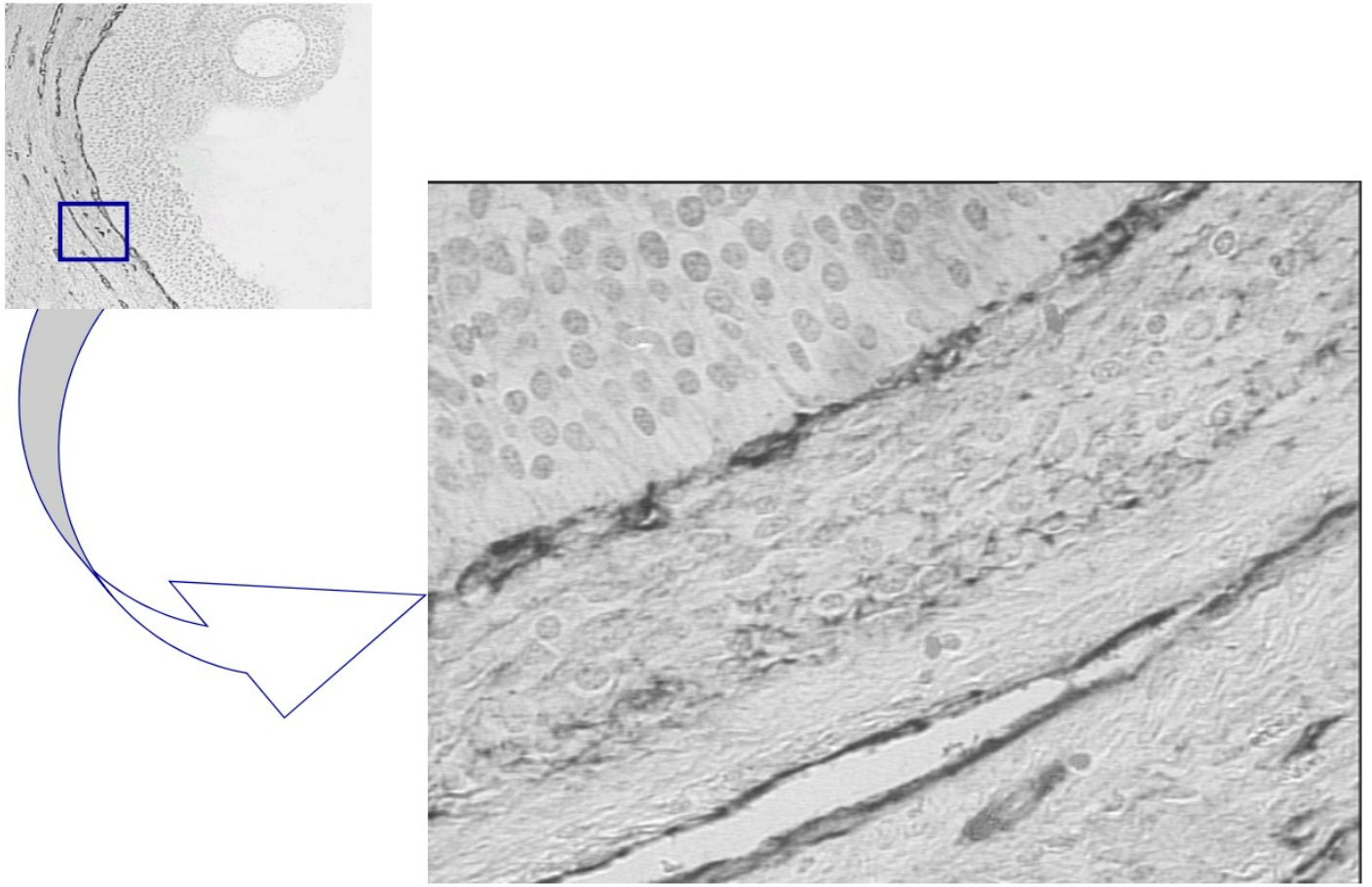


estrus cycle

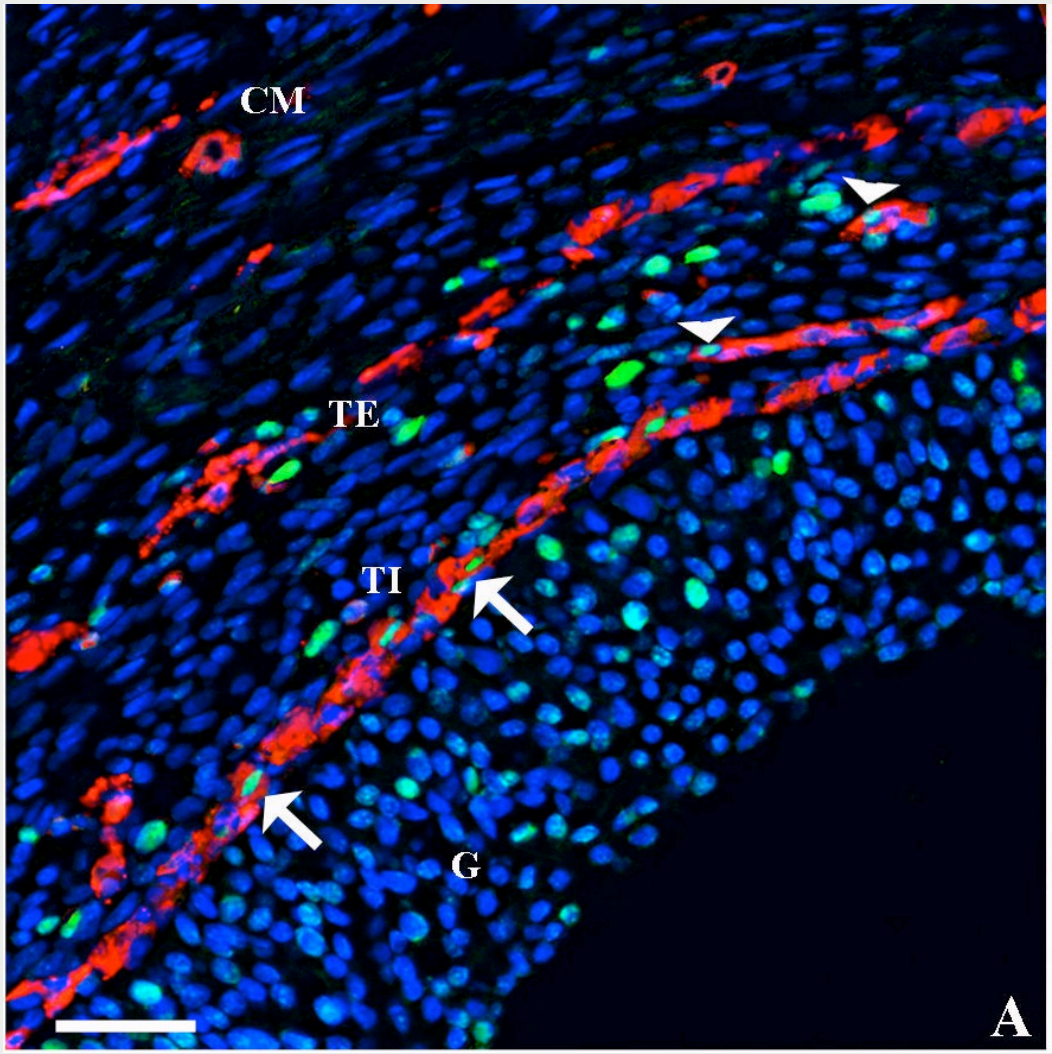


Preovulatory antral follicles blood vessel supply

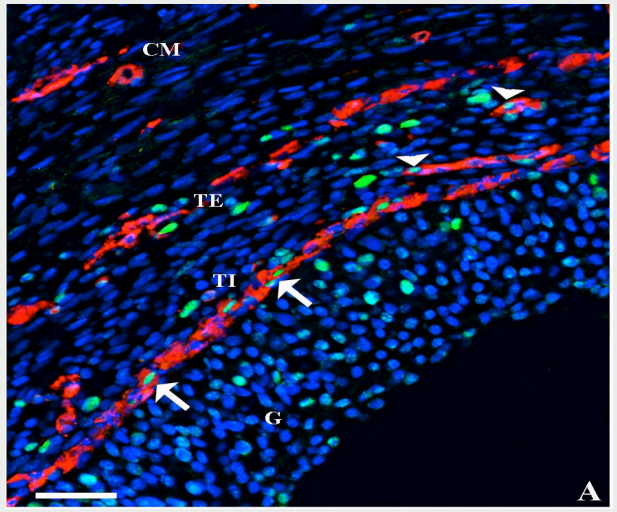


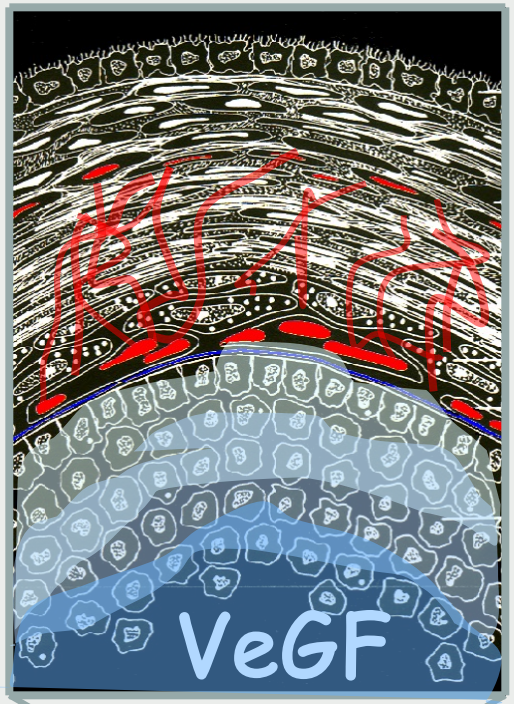


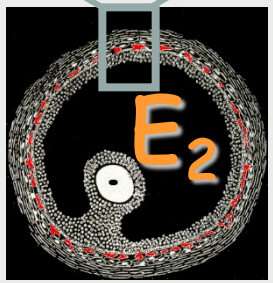
VASCULARIZATION IN
PREOVULATORY ANTRAL FOLLICLES

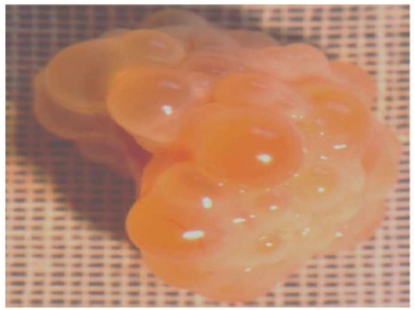


VASCULARIZATION IN
PREOVULATORY ANTRAL FOLLICLES

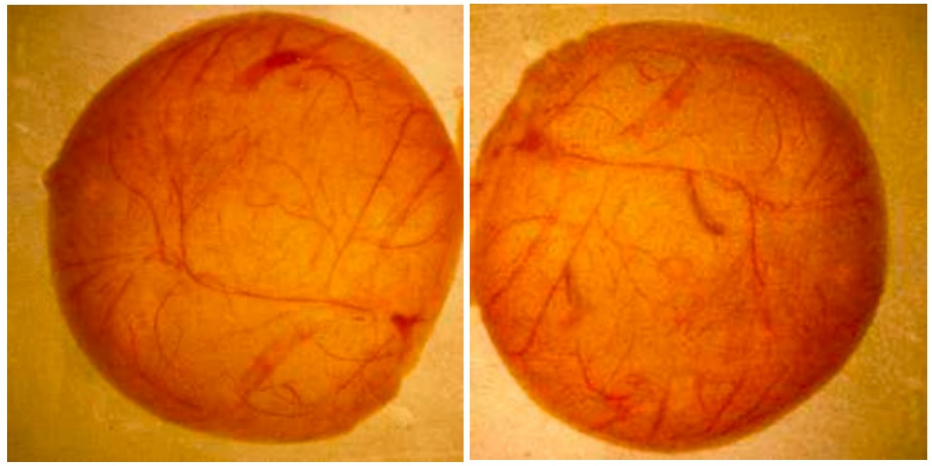




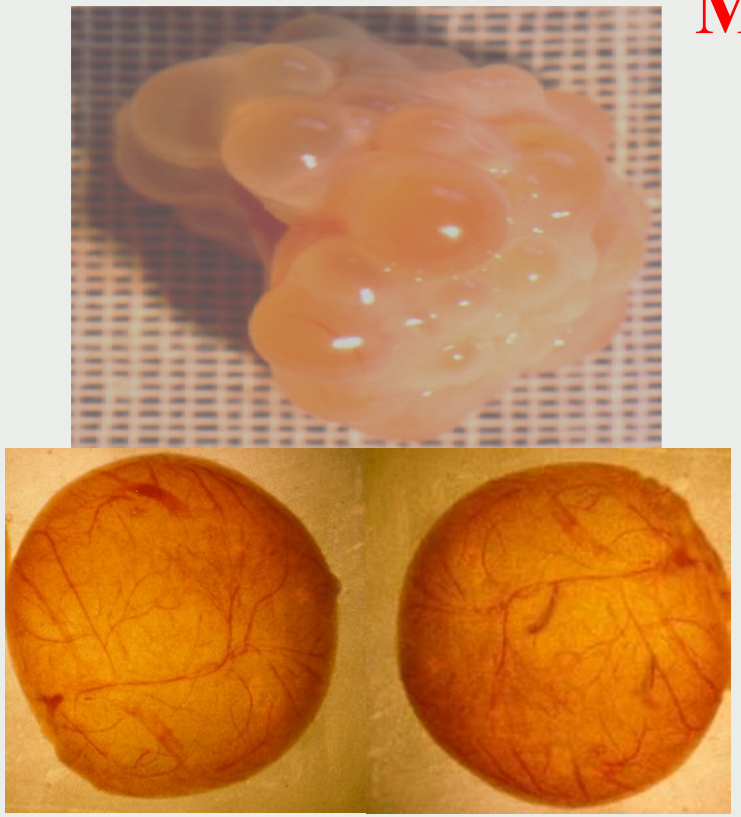




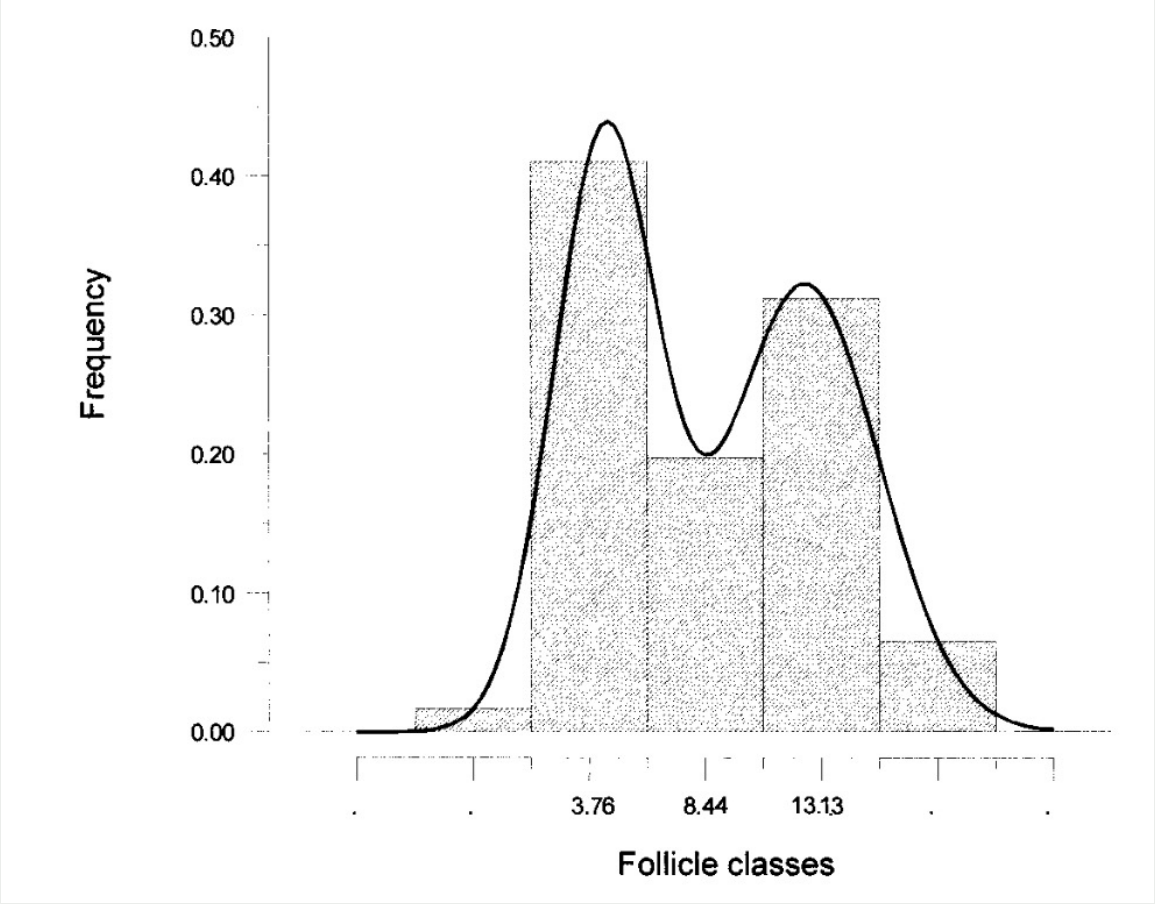
medium antral follicles

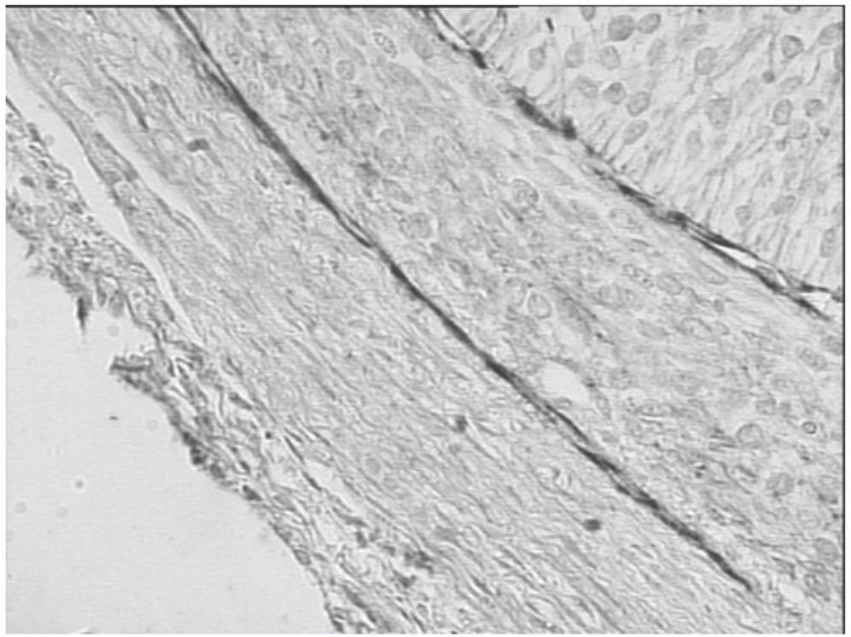


MEDIUM ANTRAL FOLLICLES

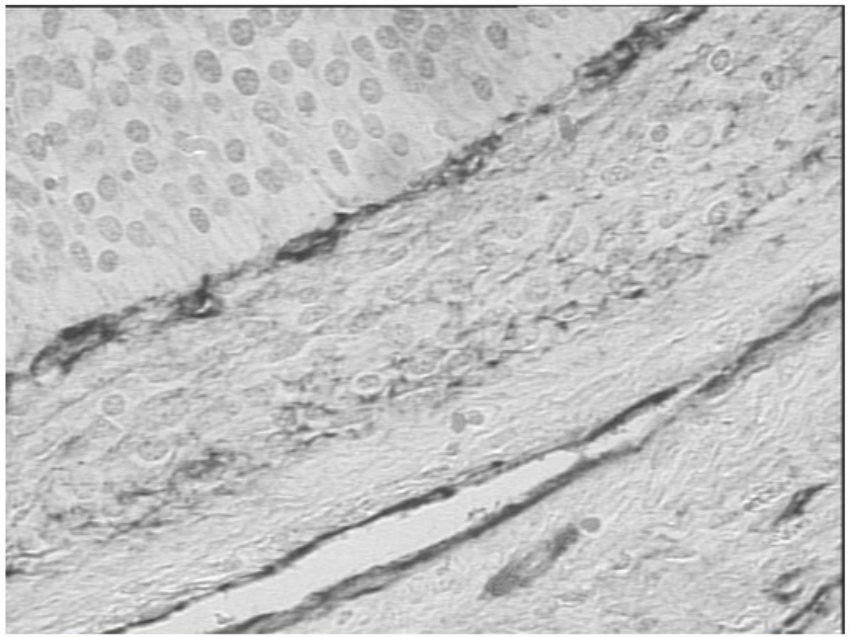


56% of follicles exhibiting low VEGF levels (mean value 3.76 ng/ml) and 44% of follicles exhibiting high VEGF levels (mean 13.13 ng/ml).





Total VA 1.29 ± 0.65

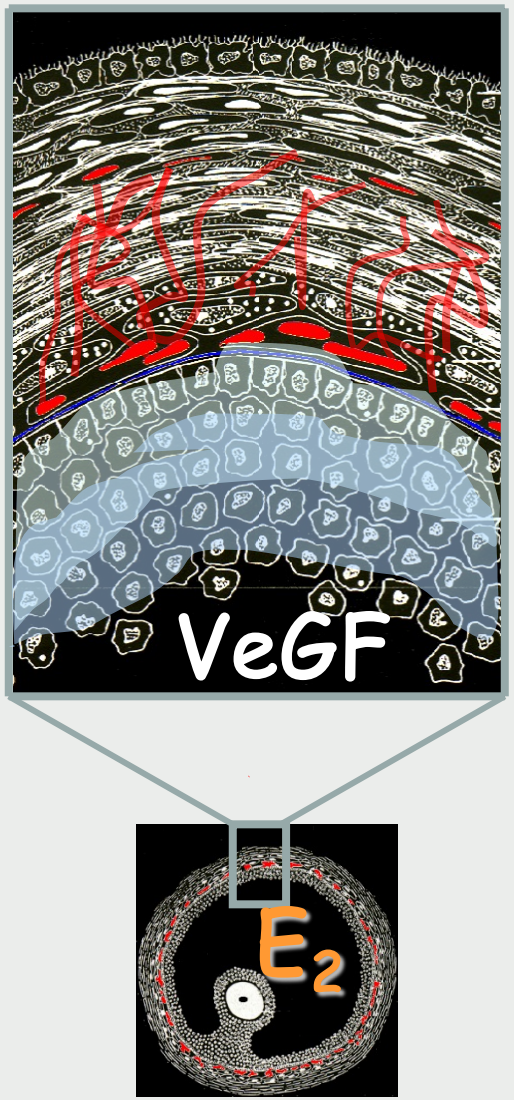


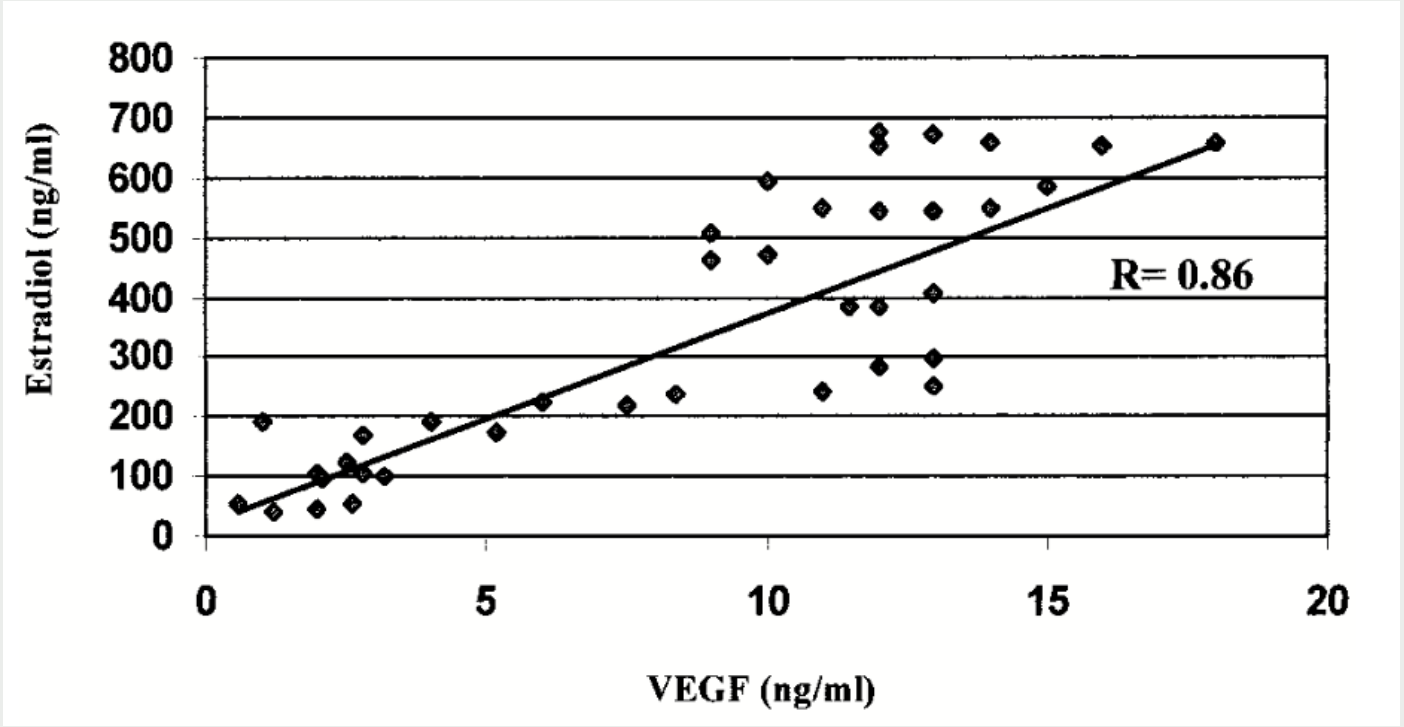
Total VA 2.54 ± 0.58 *

	Vascular area distribution (%)		
	Total	Inner network	Outer network
High VEGF follicles[a]	2.54 ± 0.58[c]	1.19 ± 0.47[c]	1.35 ± 0.58[c]
Low VEGF follicles[a]	1.29 ± 0.67[b]	0.67 ± 0.34[b]	0.61 ± 0.38[b]
Atretic follicles	1.01 ± 0.37[b]	0.15 ± 0.08[d]	0.86 ± 0.44[b]

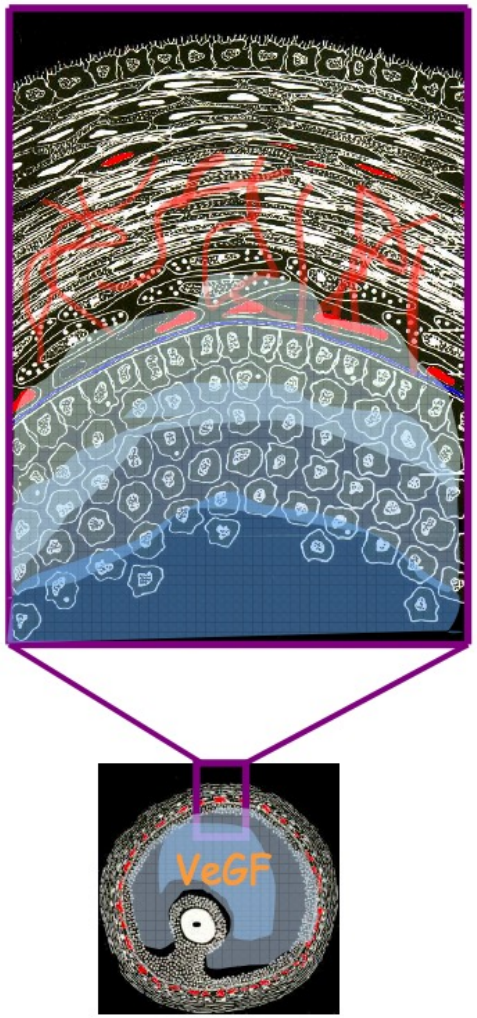
* P < 0.05

CORRELATION BETWEEN ESTRADIOL AND VEGF

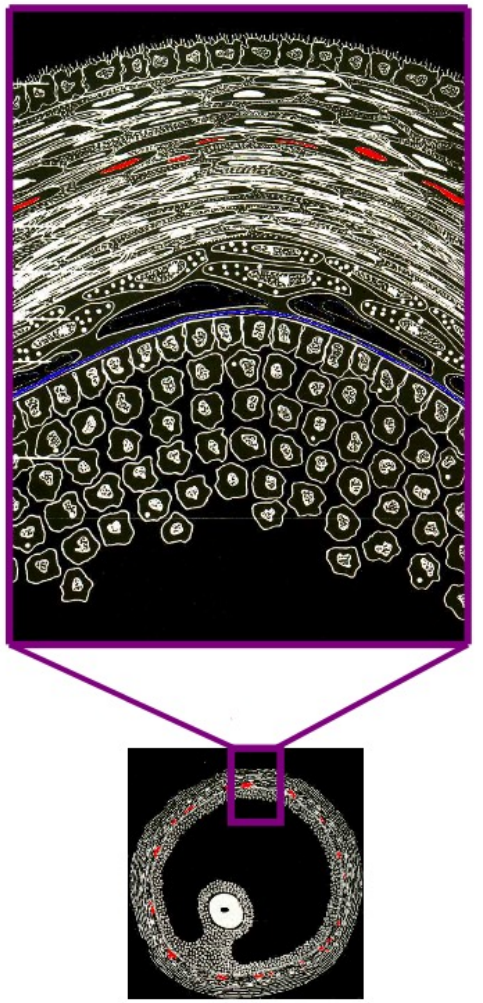


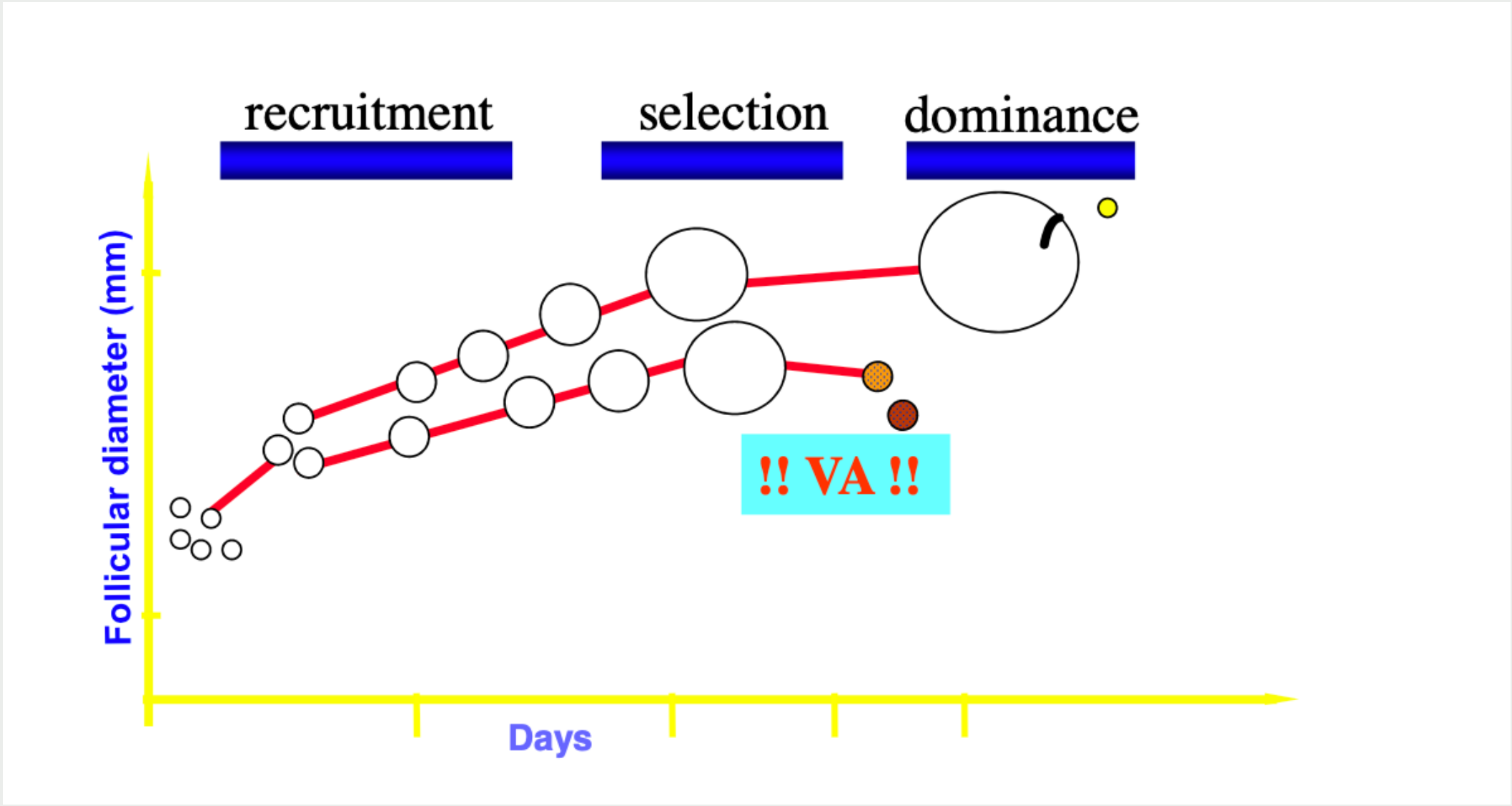


Antral Follicle

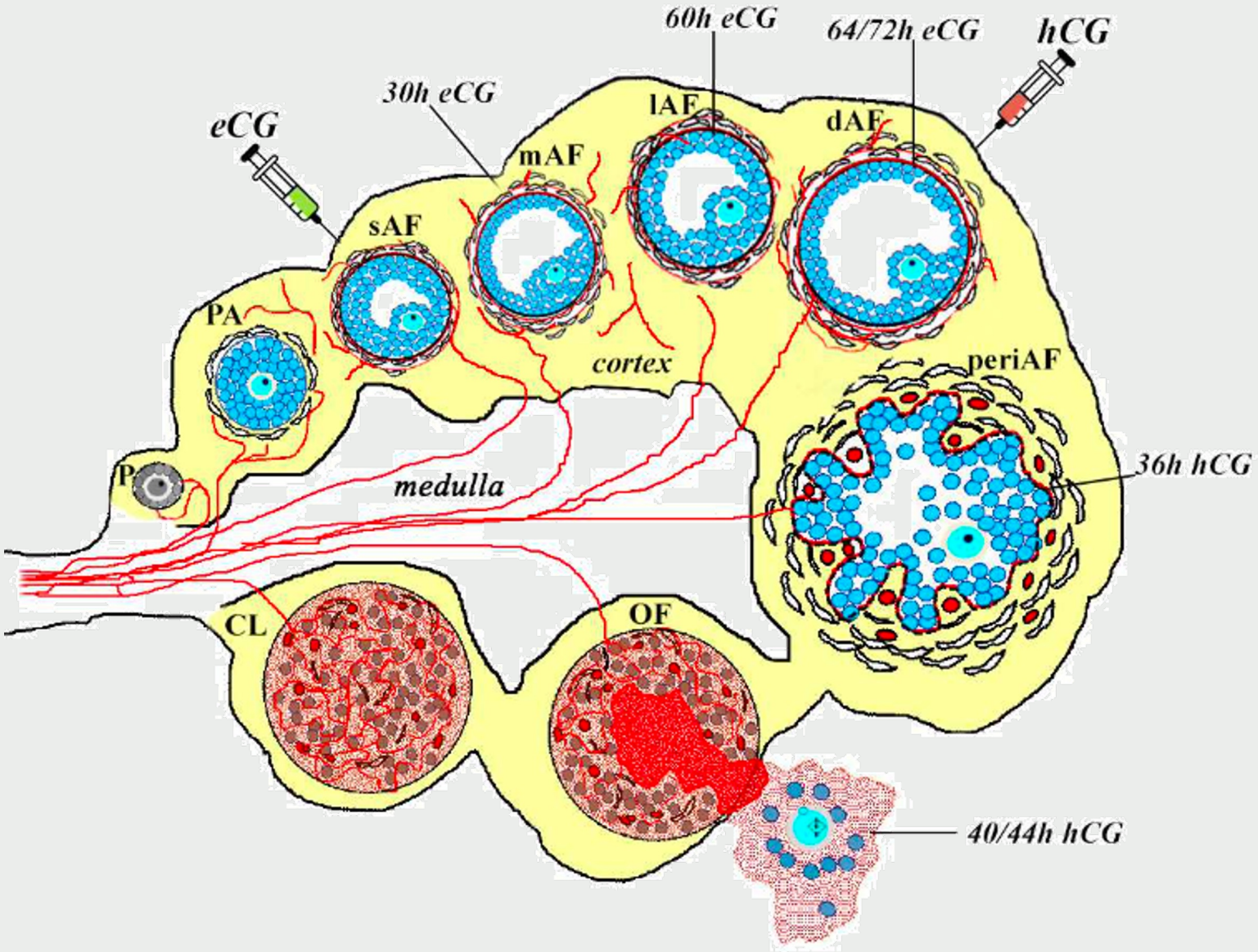


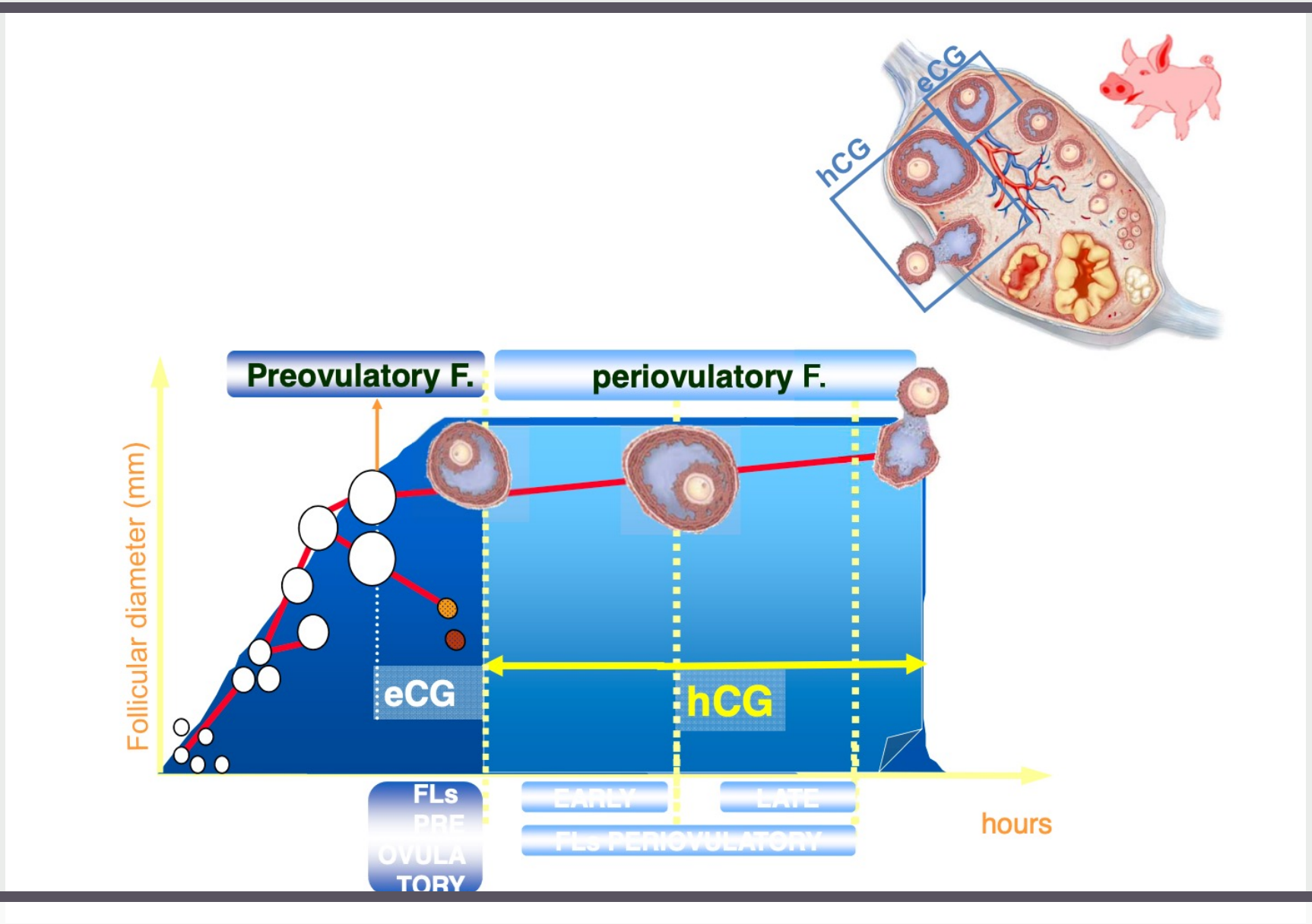
Atretic Follicle

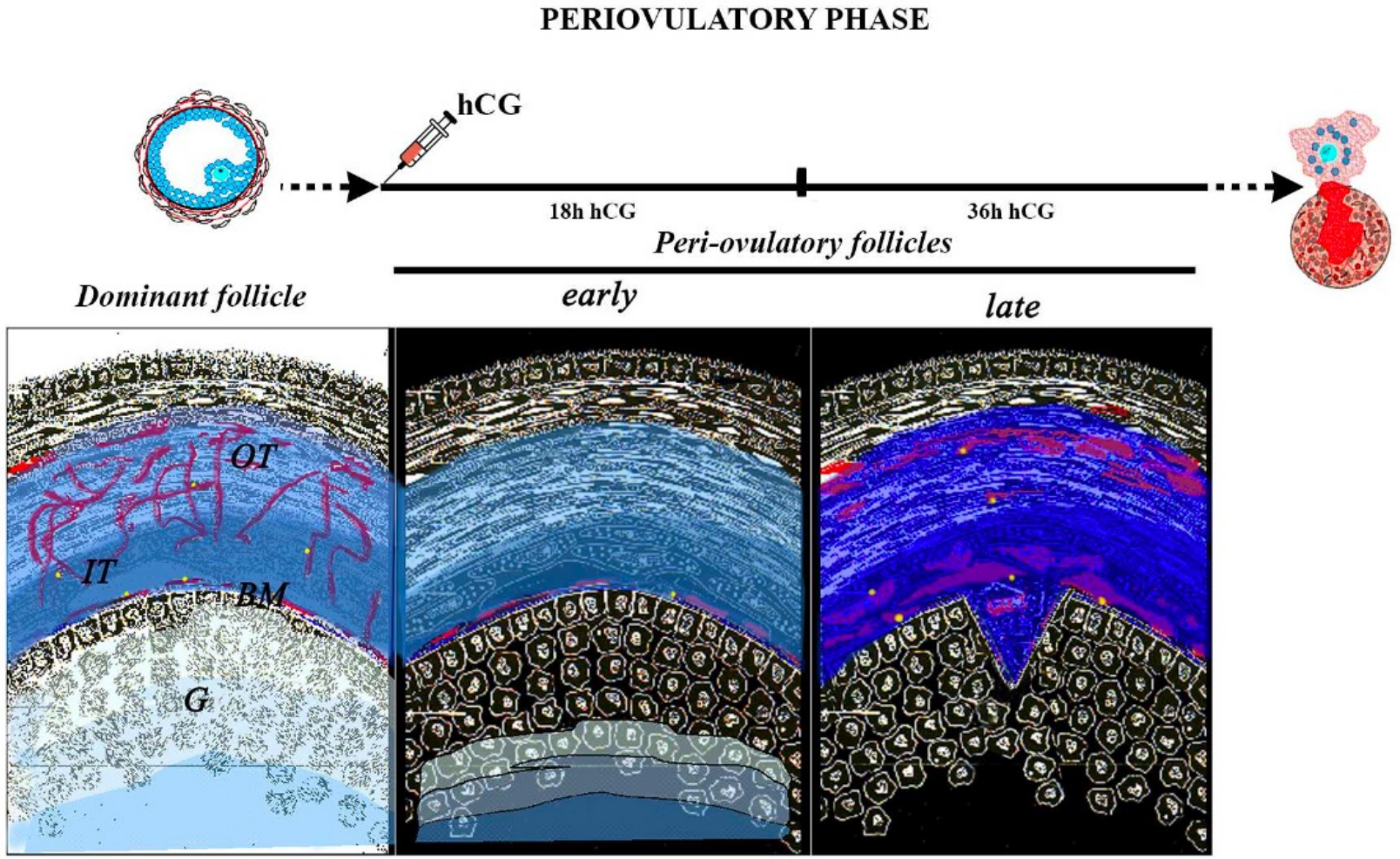



recruitment
selection
dominance
Follicular diameter (mm)
!! VA !!
Days

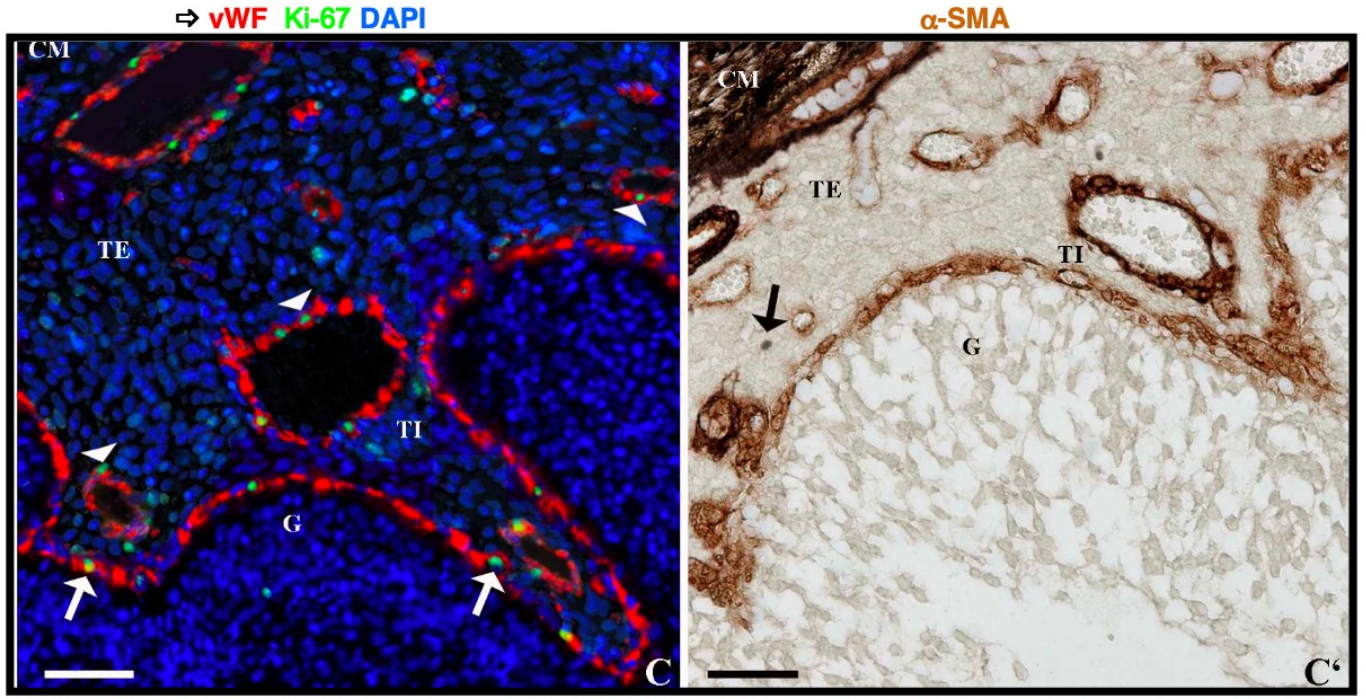
OVARIAN FOLLICULAR PHASE
BY HORMONAL PHARMACOLOGICAL TREATMENT



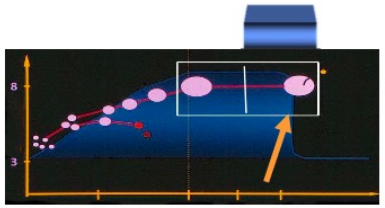

eCG
hCG
Preovulatory F.
periovulatory F.
Follicular diameter (mm)
eCG
hCG
FLs
OVULA
TORY
EARLY
LATE
FLs PERIOVULATORY
hours


PERIOVULATORY PHASE
hCG
18h hCG
36h hCG
Peri-ovulatory follicles
Dominant follicle
early
late
OT
IT
BM
G

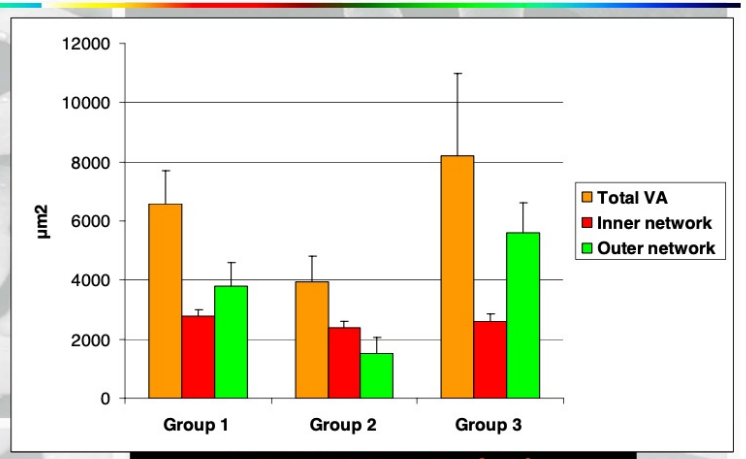
PERIOVULATORY FOLLICLES (LATE)



LEGEND: G= granulosa cells, TI= theca interna, TE= theca externa, CM=capsule of smooth muscular fibers, ↑=proliferating endothelial cells in the TI, ⇧= single α-SMA immunopositive cells, ▲ = proliferating endothelial cells in the TE

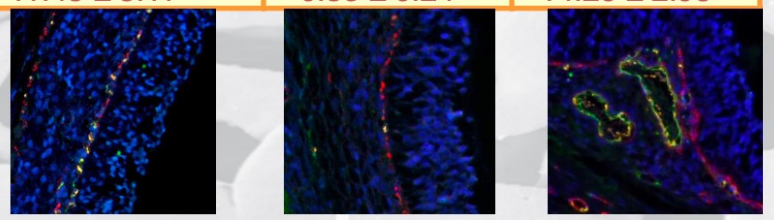


VESSELS DIAMETER: P<0.05

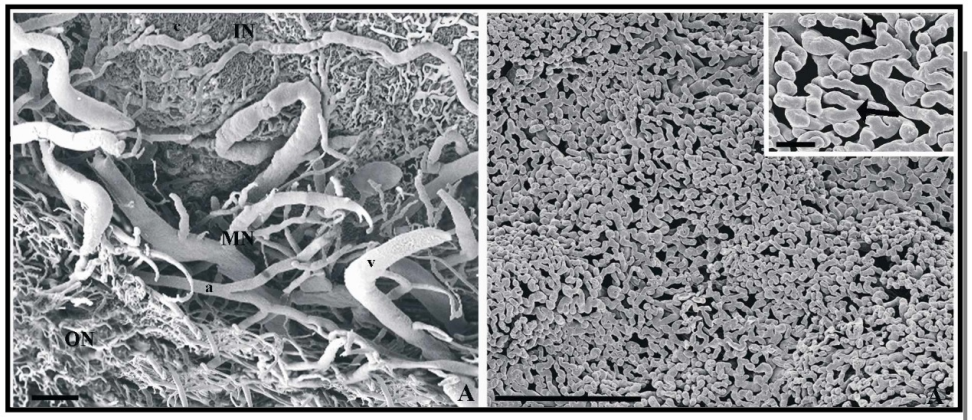


VASCULAR AREA (VA)

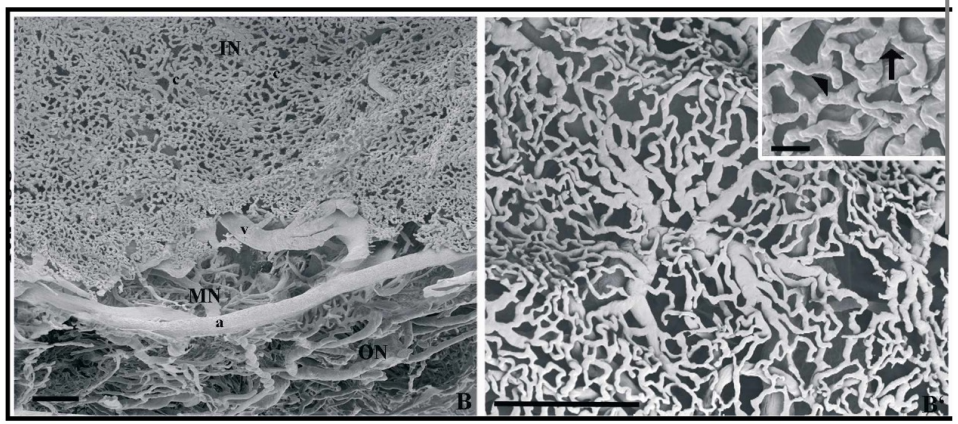
	60h-eCG	18h-hCG	36h-hCG
EPI (%)	11.43 ± 3.11 [a]	0.35 ± 0.24 [b]	14.28 ± 2.98 [a]



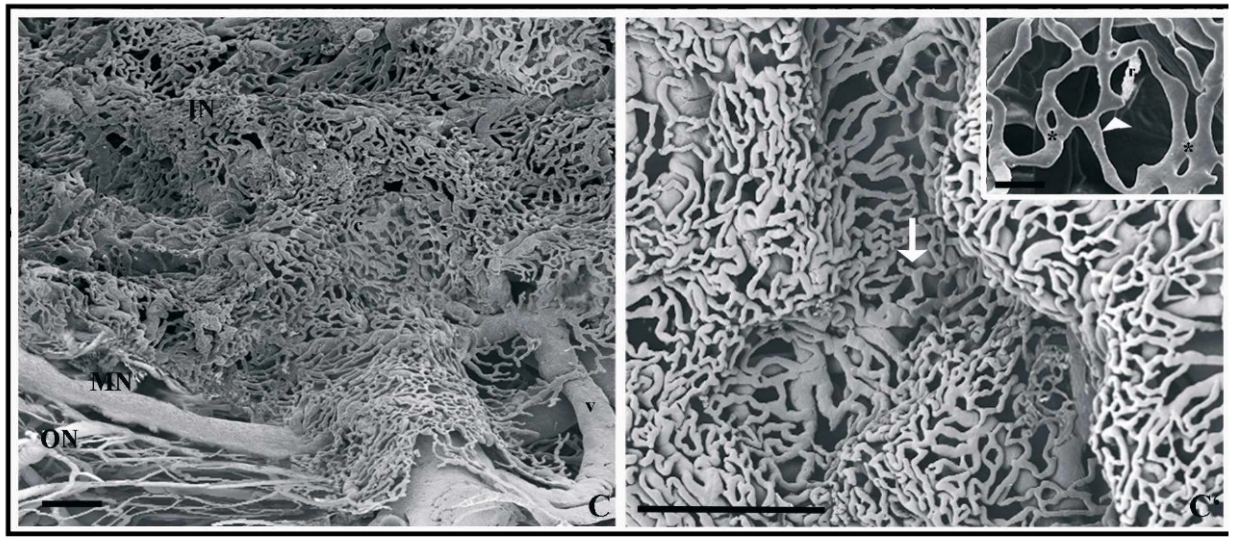
PREOVULATORY FOLLICLES



PERIOVULATORY FOLLICLES (EARLY)



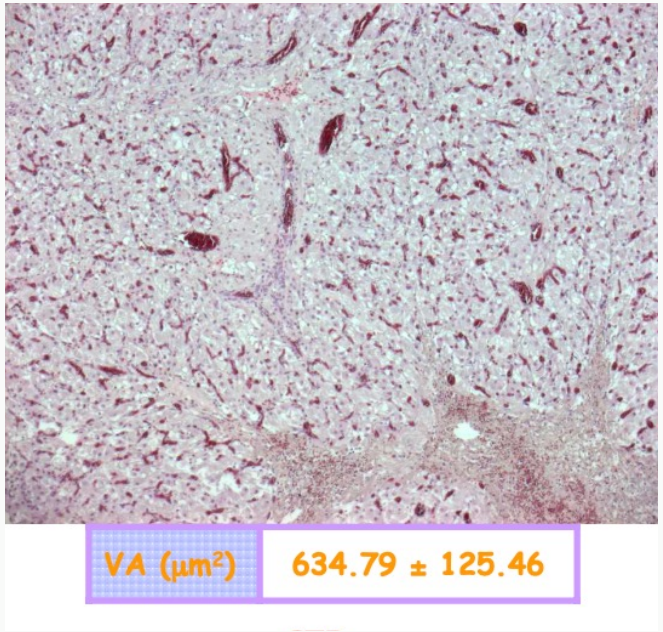
PERIOVULATORY FOLLICLES (LATE)

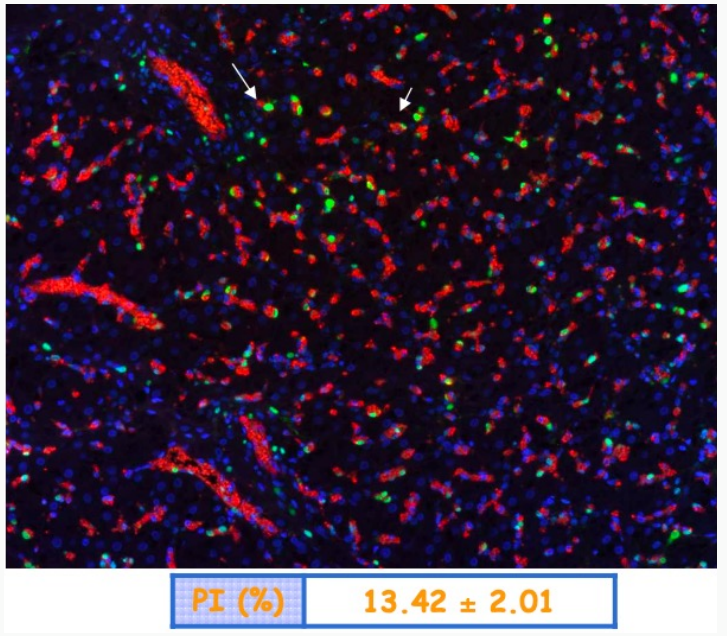


c= capillaries, v= veins, a= arterioles, IN, MN and ON = inner, middle, and outer network, r= resin leakage artifacts, ⇧= sprouting, △= budding, ✱= infolding-intussusception

Bar= 100 μm
Bar in insert panel= 25 µm

CORPUS LUTEUM





CORPUS LUTEUM