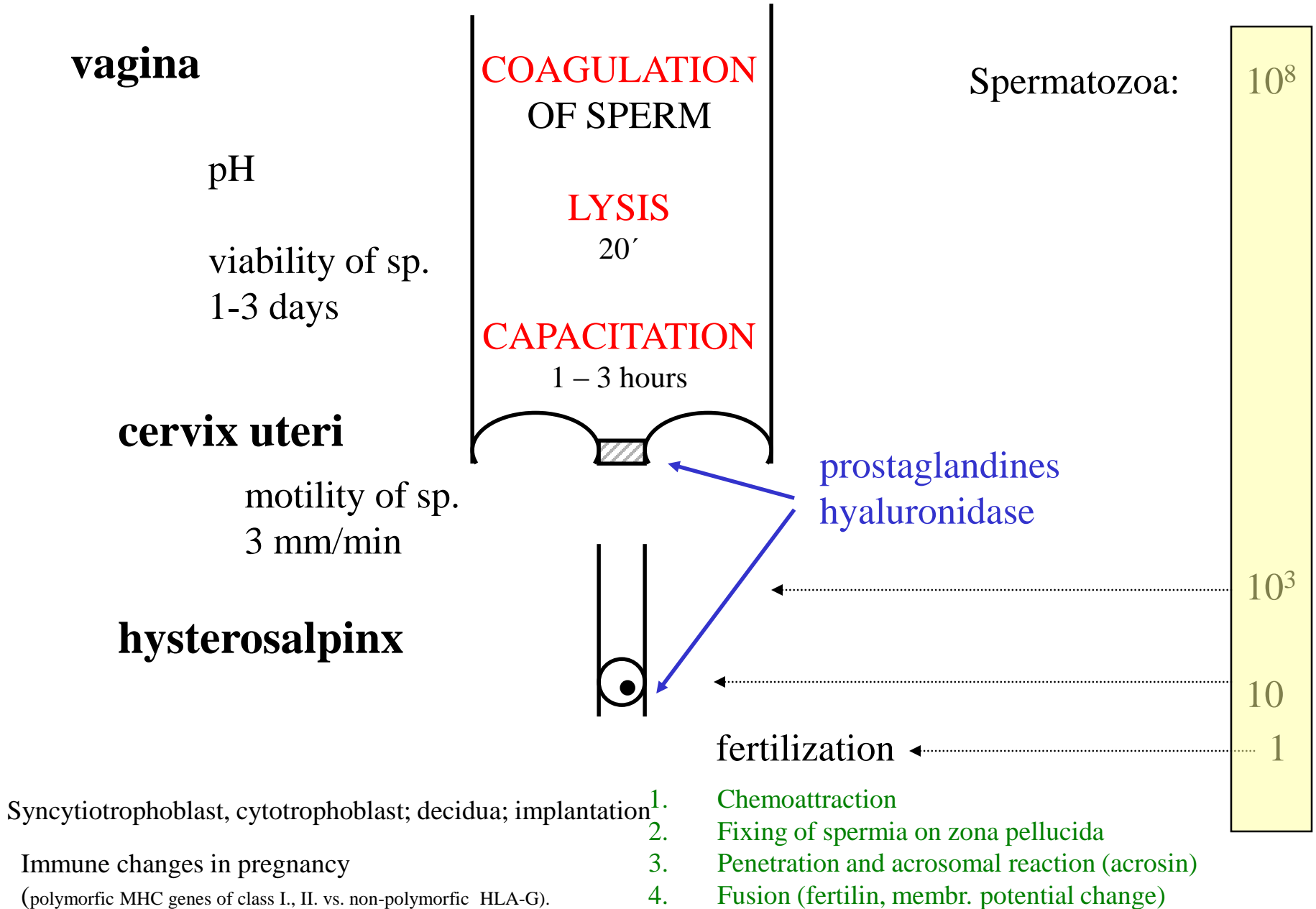
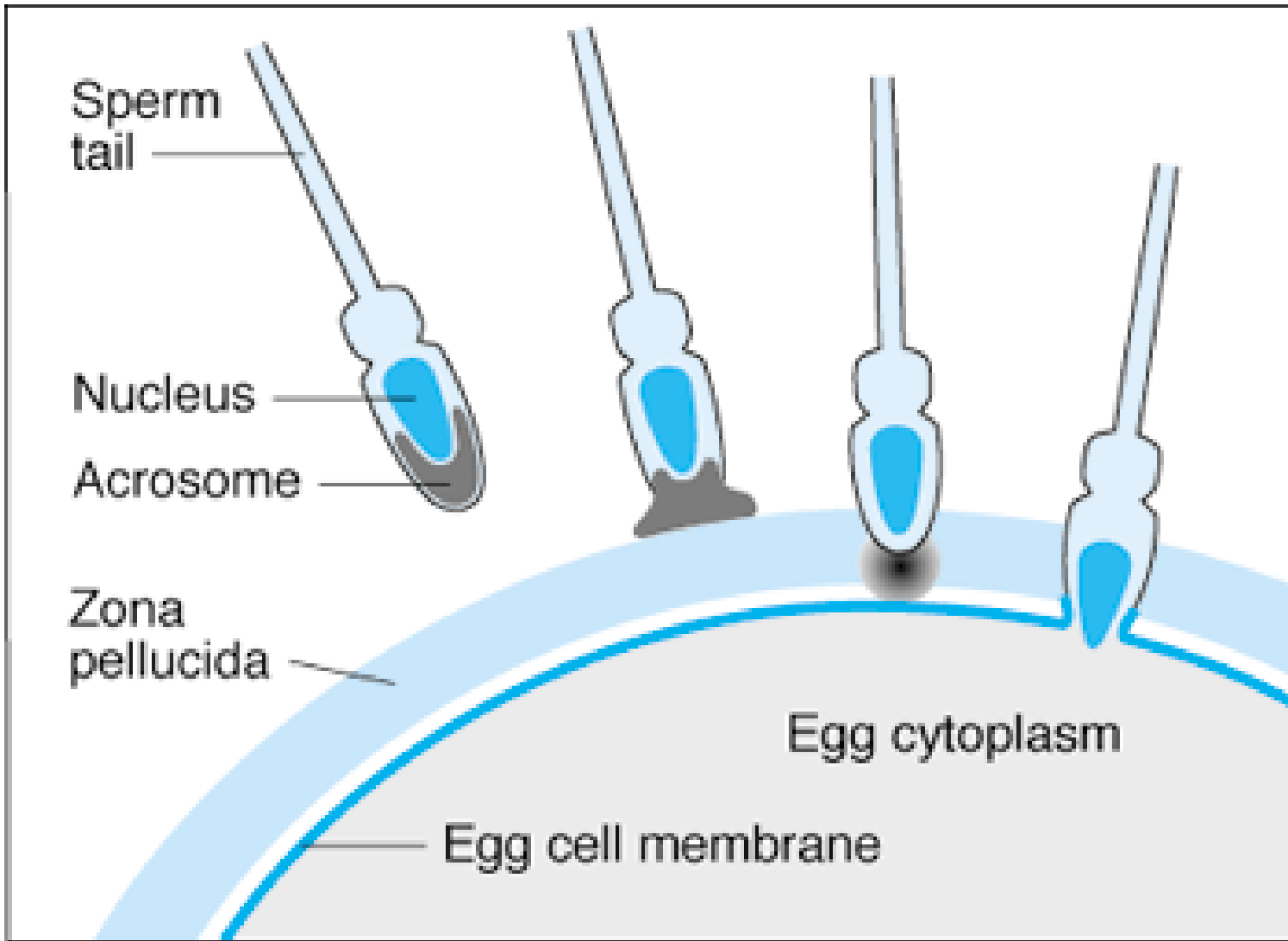


# **PREGNANCY, PARTURITION, LACTATION**

# FERTILISATION PROCESSES





# HORMONES IN GRAVIDITY

*Placenta, corpus luteum graviditatis*

(8th week!!!)

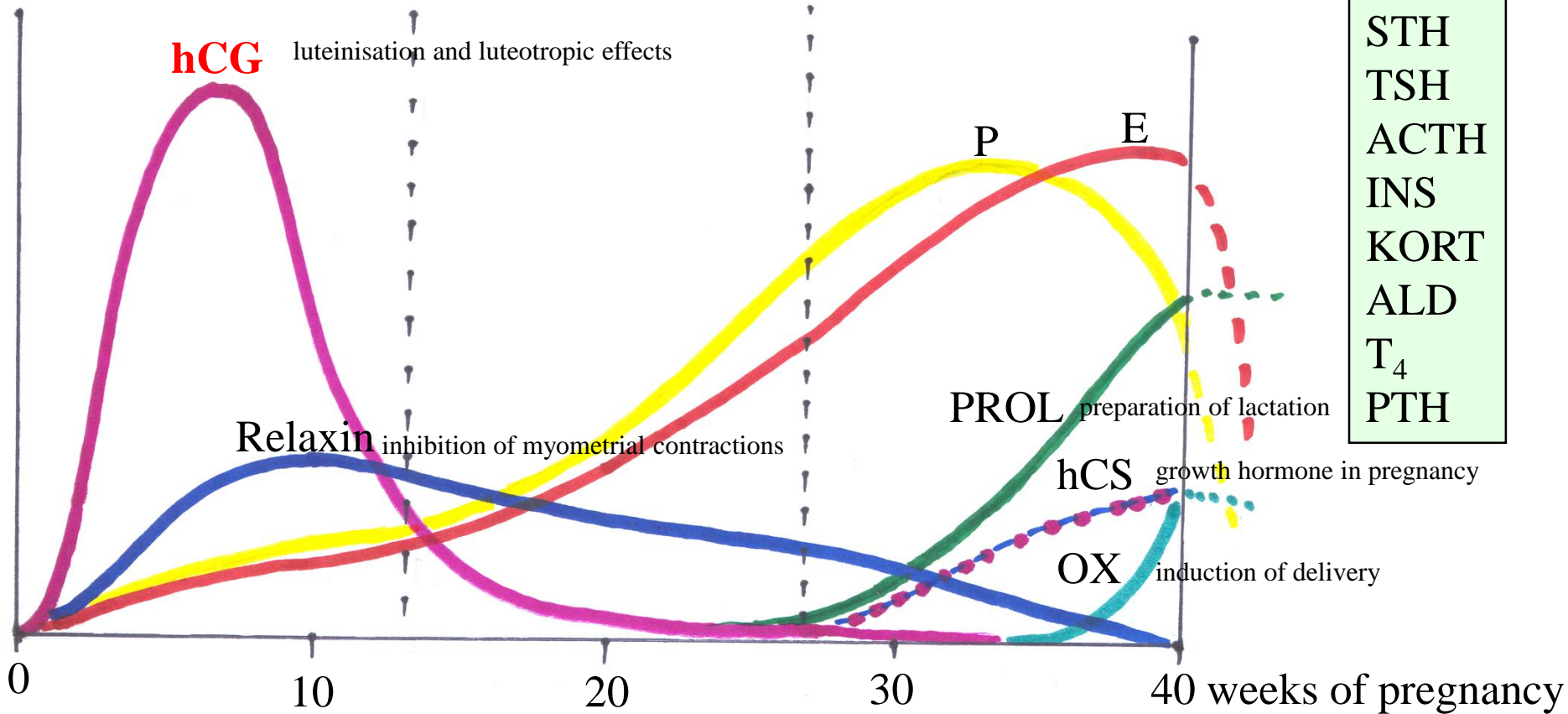
hCG, hCS, E, P

E, P, Relaxin

I.

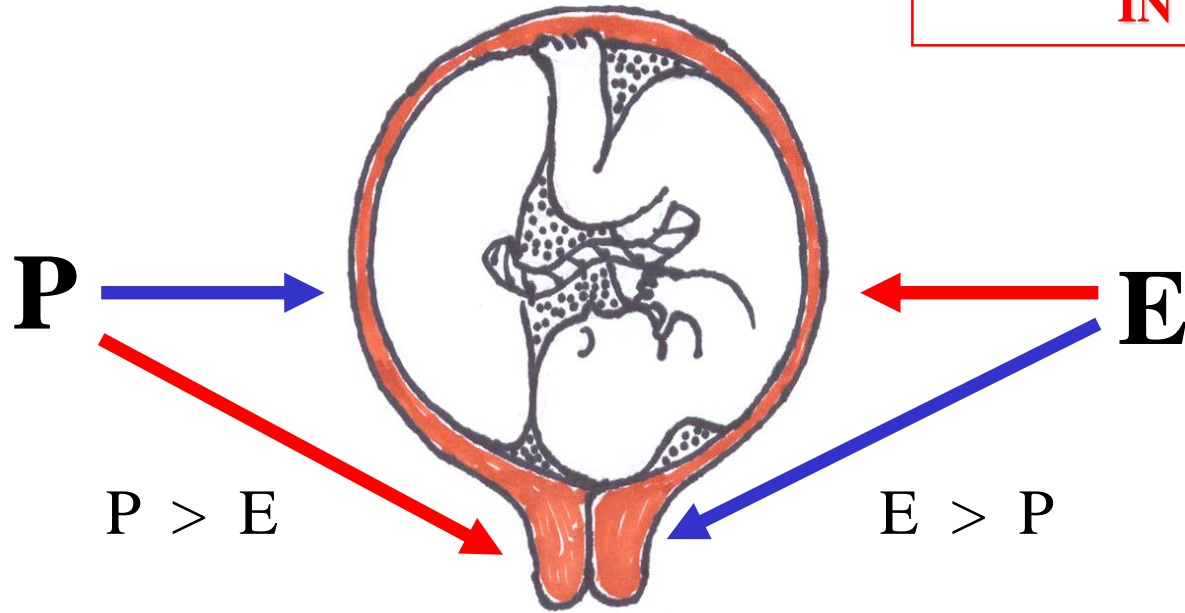
II.

III. trimester



Placental – maternal - foetal

**RELATIONSHIP BETWEEN P:E  
IN PREGNANCY**



Foetoplacental unit

MOTHER	PLACENTA	FOETUS
cholesterol	pregnenolone	DHEAS
	progesterone	cortisol aldosterone
DHEAS	estradiol	

Excretion of estriol in urine – index of foetal status

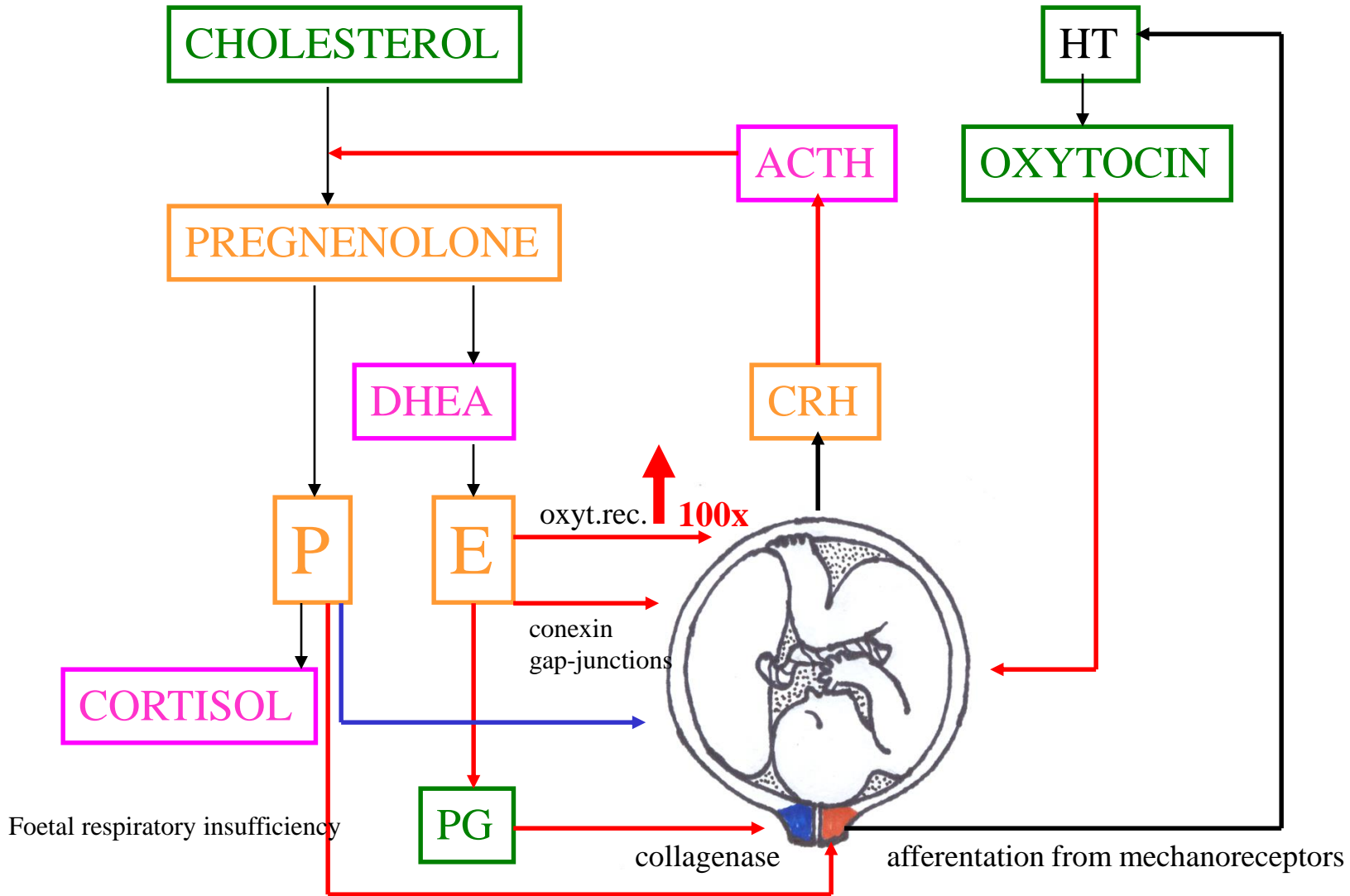
## OXYTOCIN

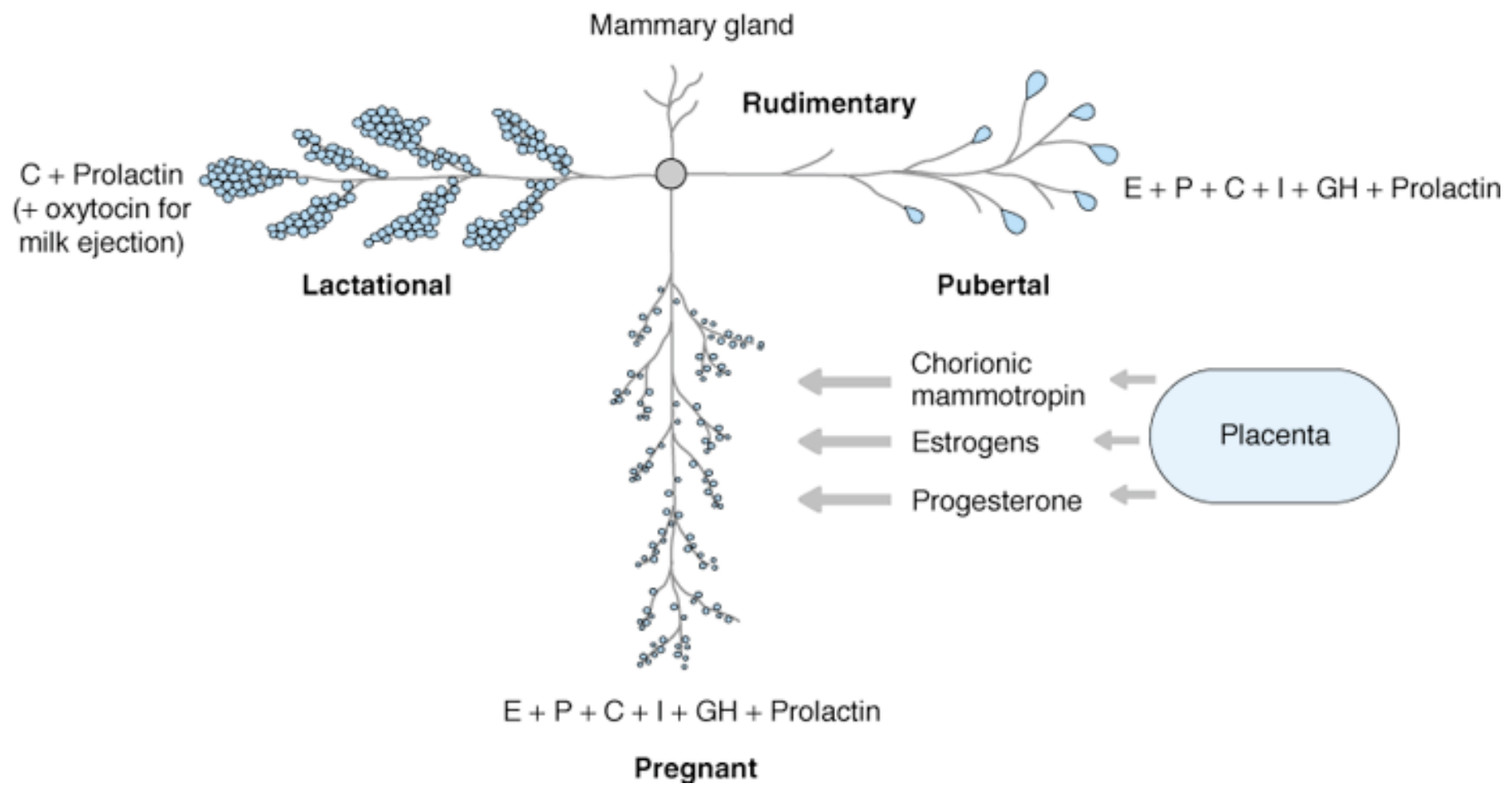
- 9 AA, differs from ADH in 3. a 8. AA
- Precursor molecule is synthesized in the same location as ADH (*nucleus paraventricularis*)
- Stimulus for synthesis: dilatation of birth path caused by pressure of foetus and stimulation of mechanoreceptors at breast nipple
- Reflex release: during breast-feeding, orgasm
- Main effects – on reproduction system:
  - Uterokinetic effects (induction of parturition), milk ejection
  - In men: probably increases contractions of smooth muscle in *ductus deferens*
- Regulation of water and mineral metabolism – natriuretic effect, potentiation of ADH effect
- Effect on memory: opposite to ADH effect – inhibits forming of memory and its recollection
- Note: Melanocytes inhibiting factor – from oxytocin, modulates certain types of receptors, modulation of melatonin effects (melatonin – epiphysis, together with glomerulotrophin and DMT, circadian/circannual biorhythms, controlled by hypothalamus, information from retina)

# INDUCTION OF BIRTH

maternal  
placental  
foetal

$P > E \longrightarrow E > P$

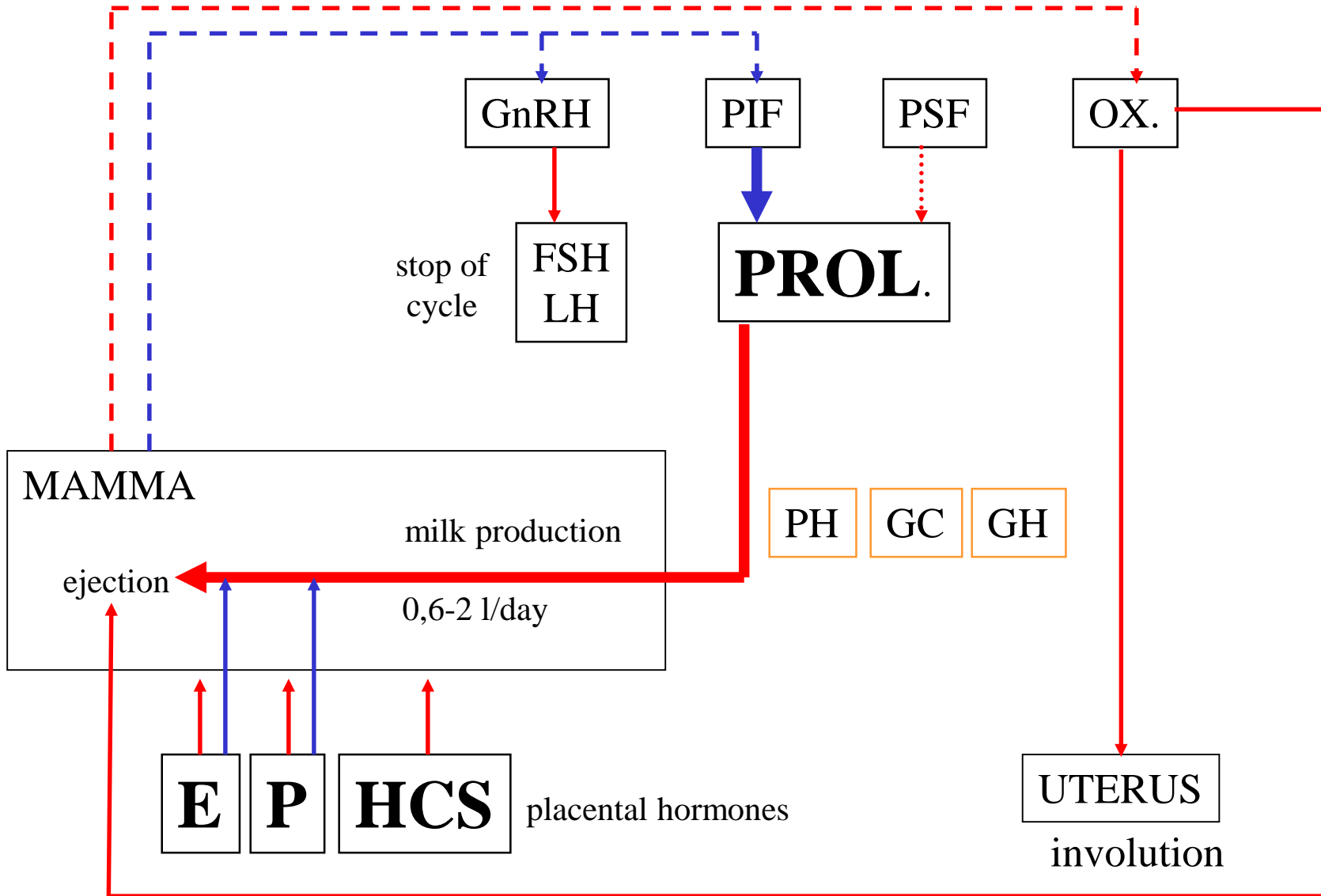






# LACTATION

1 – 3 days after birth; initiated by decrease of estrogens concentrations after delivery



Composition of milk: water (88%), fat (3,5%), lactose (7%), proteins (1%)  
trace minerals (Ca), vitamins, antibodies

(hyperprolactinaemia)

# LEPTIN AND REPRODUCTIVE FUNCTIONS IN WOMEN

## LEPTIN IN PREGNANCY

Synthesised by placenta from the 18th week of pregnancy.

Dramatic increase in maternal blood after the 34th week.

Synthesis in placenta, foetal adipose tissue and growing maternal adipose tissue.

**BUT** leptin plasmatic levels in non-pregnant women do not correspond to adipose tissue amount (BMI).

Decrease after delivery down to the levels typical for non-pregnant women.

Leptin may play a role in proliferation and function of trophoblast, and thus affects foetal growth.

## LEPTIN IN NEWBORNS

Plasmatic levels of leptin correspond to newborn body mass and BMI.

Blood of newborn contains maternal and foetal leptin.

Girls have higher levels of leptin than boys.

It is supposed, that sex differentiation of plasmatic levels of leptin is already genetically given, since it is not affected postnatally by sex hormones.