

# Uterine Cycle

## What about yours ?

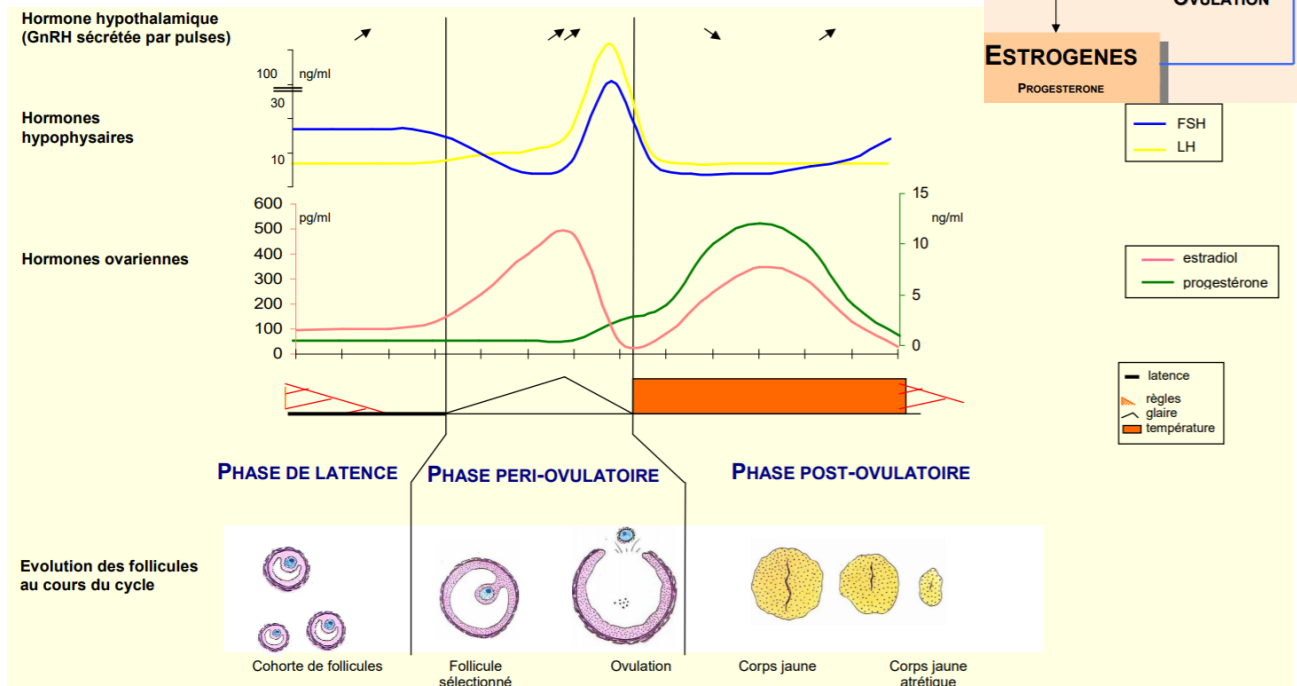
At the age of puberty, all girls discover a new facet of their body : the periods. Periods occur every month (without pregnancy) indicating that previous ovulation has occurred. Our brain, indirectly connected to our ovaries through these hormones is the main activator of ovulation. But how exactly the brain and the ovaries communicate with each other? Which hormones come into play and how important are they?

The goal of the simulation is to show what happens when the ovary is in the ovulation stage (generally the 14th day) : phase peri-ovulatory. With this simulation we can observe different ovulation states : depending on whether the young woman takes a contraceptive, or if she has a medical condition and so only one active ovary.

In the real life, our uterine cycle are governed by 5 hormones : LH, FSH and GnRH derived from brain, and progesterone and oestradiol directly produced by the ovaries. But to simplify my simulation is used only LH and Oestradiol.

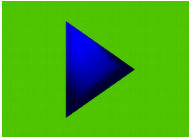
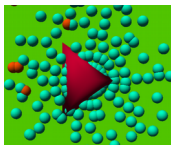
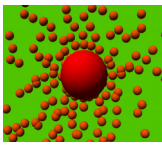
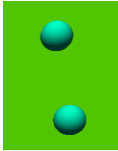
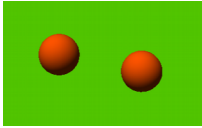
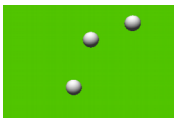
When the follicle in the ovary has matured, the ovaries secrete oestradiol. This oestradiol in high concentration will stimulate the pituitary which will generate a large amount of LH to allow this ovulation.

- Ovaries produce oestradiol
- Pituitary with an LH count produce LH
- Ovaries stop producing oestradiol when LH hit count is high



## Simulation

To simplify the simulation we use only LH and estradiol which are the two major hormones.

Pituitary		Ovary	LH	Oestradiol	Unatural hormone
Inactiv	Activ	Activ			
					
inactive at the beginning of the cycle	Activ when the hit count of oestradiol is high	activated from the beginning of the cycle	LH go inactivate the ovaries and start the ovulation	Oestradiol goes activate the hypothalamus for strat the ovulation	Play the rôle of oestradiol. Without oestradiol no pic of LH

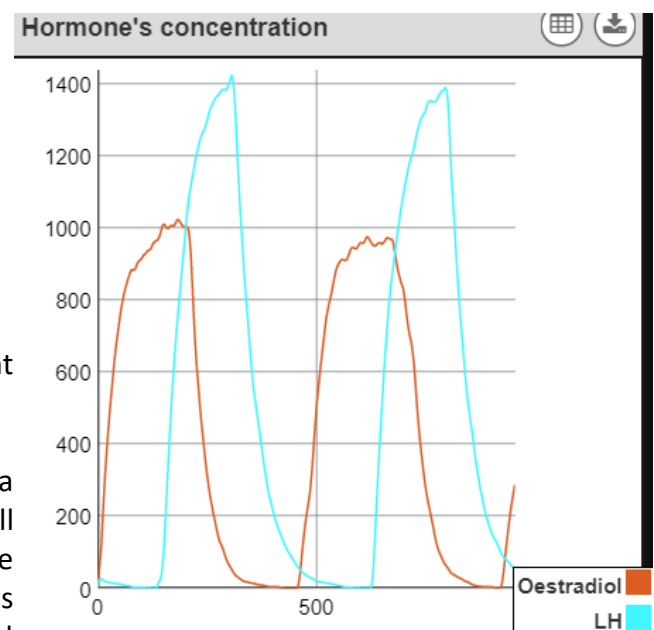
## Different conditions with different button

- If you have one ovary
- If you have two ovaries
- If you take a contraceptive pill

## For understand

There is a graph which show us the different concentration of hormones in different conditions.

Don't worry if you see nothing when you added a contraceptive pill : The role of the oestrogenic pill is to rest the ovaries. No follicle production is observable and therefore no estradiol or LH peak. The hormones contained in the pill are in sufficient quantity to avoid peaks and therefore ovulation.



Graph : woman with 2 ovaries

## Hypothesis

→ Is there a change in the length of the cycle depending on the number of ovaries ?

→ Women that can't ovulate : pathologic or eager ?