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Physiology Assignment

1. The Cyclic changes in the Vagina

The vagina and vulva of the ferret undergo well‐marked cyclical changes in correlation with those of the ovaries and uterus.

During the anœstrum the vulva is small and the connective tissue of which it is mainly composed is compact. The vagina during this period is lined by a low columnar epithelium consisting of only two or three rows of cells and without a cornified layer.

yDuring the pro‐œstrum and œstrus the vulva swells up to about fifty times its anœstrous size, the submucous connective tissue becoming spongy and the nuclei of the cells widely separated. The vaginal epithelium is several layers in thickness, and in the deeper part the cells become high and squamous. There is a pronounced cornified layer. Later, during cestrus, the cornified layer begins to slough, the process being continued over some time. The entire period represents the “follicular stage” of LOEB and other authors, and is presumably brought about by the action of œstrin. The vulval swelling serves the purpose of facilitating effective copulation which in the ferret is very prolonged.

During pregnancy and pseudo‐pregnancy (the latter condition in the ferret only occurring under experimental conditions as after copulation with a vasectomised male) the vulva is reduced to its ancestrous size. The reduction is accompanied by lymphoid degeneration and an invasion of leucocytes. The vaginal epithelium becomes reduced to a low columnar or cubical structure. There is no cornified layer, this being completely shed during œstrus. This period clearly represents the “luteal phase” in the ovarian cycle.

It is to be noted that the vulval swelling and other characteristics of the follicular stage terminate with ovulation just as does the swelling of the sexual skin in the Primate, as described by ZUCKERMAN and PARKES.

The description of the changes here recorded are in general agreeument with the observations by PARKES (1930) on the vaginal smear at different stages of the cycle in the ferret.

The vaginal cycle in the ferret is in a general way similar to that of the dog, as described by EVANS and COLE. It may be again remarked, however, that pseudo‐pregnancy only occurs under experimental conditions in the ferret, yet under the influence of pro‐gestin secreted by the corpus luteum the vagina and vulva undergo similar changes during both pregnancy and pseudo‐pregnancy.

1. The menstrual cycle

What is menstruation?

normal\_cycleMenstruation is the technical term for getting your period. About once a month, females who have gone through puberty will experience menstrual bleeding. This happens because the lining of the uterus has prepared itself for a possible pregnancy by becoming thicker and richer in blood vessels. If pregnancy does not occur, this thickened lining is shed, accompanied by bleeding. Bleeding usually lasts for 3-8 days. For most women, menstruation happens in a fairly regular, predictable pattern. The length of time from the first day of one period to the first day of the next period normally ranges from 21-35 days.

How does the menstrual cycle work?

The menstrual cycle is controlled by a complex orchestra of hormones, produced by two structures in the brain, the pituitary gland and the hypothalamus along with the ovaries.

If you just want a quick, general overview of the menstrual cycle, read this description.

For a more detailed review of the physical and hormonal changes that happen over the menstrual cycle, click here.

General overview of the menstrual cycle:

The menstrual cycle includes several phases. The exact timing of the phases of the cycle is a little bit different for every woman and can change over time.

Cycle days (approximate)

Events of the menstrual cycle

Days 1-5

The first day of menstrual bleeding is considered Day 1 of the cycle.

Your period can last anywhere from 3 to 8 days, but 5 days is average.

Bleeding is usually heaviest on the first 2 days.

Days 6-14

Once the bleeding stops, the uterine lining (also called the endometrium) begins to prepare for the possibility of a pregnancy.

The uterine lining becomes thicker and enriched in blood and nutrients.

Day 14-25

Somewhere around day 14, an egg is released from one of the ovaries and begins its journey down the fallopian tubes to the uterus.

If sperm are present in the fallopian tube at this time, fertilization can occur.

In this case the fertilized egg will travel to the uterus and attempt to implant in the uterine wall.

Days 25-28

If the egg was not fertilized or implantation does not occur, hormonal changes signal the uterus to prepare to shed its lining, and the egg breaks down and is shed along with lining.