

Reproductive tract of the female rabbit

Esther van Praag, Ph.D.

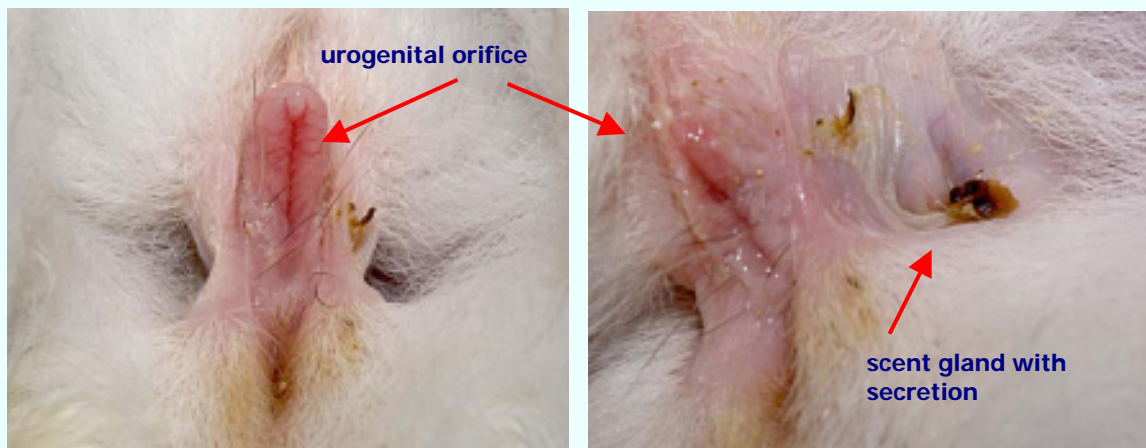
Warning: this file contains pictures that may be distressing for people.

The reproductive organ of the female rabbit is considered as primitive. Indeed, the splitted two-horned system is only observed in monotreme egg laying mammals and in lagomorphs (pika, hare and rabbit). The organ is hold in place by a broad ligament that is anchored at 4 points under the vertebral column.

Sex differentiation occurs during the embryonic phase, on the 16th day post fertilization. The ovaries grow from an aggregate of cells that is lying near the original testes. The development of the ovaries is accompanied by the degeneration of the testes.

The development of the ovules (female reproductive cell) starts around the 21st day and continues till birth, around the 30th day. The first ova and follicles start to develop only 13 days after birth.

The reproductive organ of the female rabbit is duplex: the uterus is formed by two independent horns, split over their whole length (± 7 cm). Each horn



VEIN (Veterinary Exotic Information Network) System, Copyright © Akira Yamanouchi

Left: View of the external female genital part
Right: One of the two scent glands, located on each side of the urogenital orifice, containing secretion

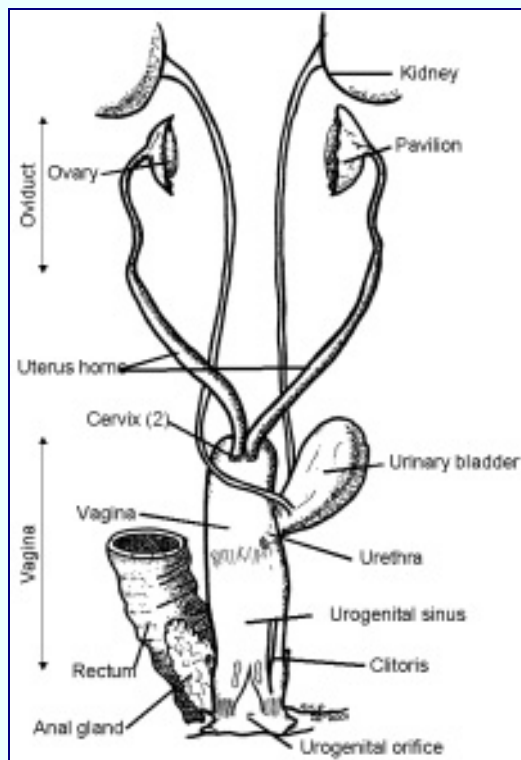


posses its own cervix. The ovaries, ellipsoid bodies that have a maximal length of 1-1.5 cm, are located at the end of the uterus, right under the kidneys. They are hidden by the mesometrium (portion of the broad ligament that separates and encloses the uterus) and fat.

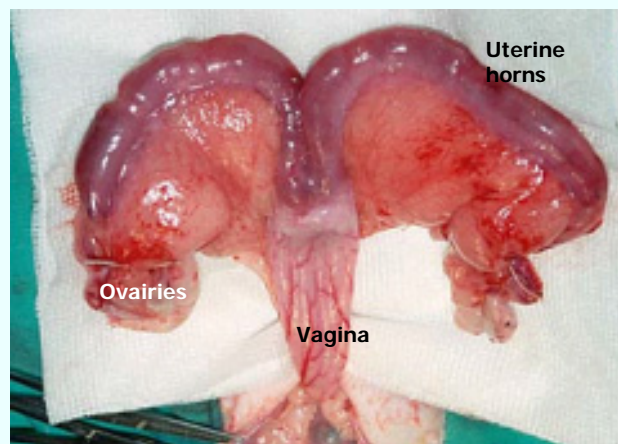
The vagina does not present any particularities. This part of the reproductive tract is large, with the urethra joining halfway, at the level of the vaginal vestibule. At the end of the vagina, the glands of Bartholin and prepuccial glands can be recognized.

The age at which sexual maturity is reached depends on the size and the breed: while small and middle sized rabbits become adult between 4 and 6 months, it may take between 5 to 8 months for giant breeds. As a rule, it is considered that a rabbit is adult and able to reproduce when it has reached 75 to 80% of its adult size.

Female rabbits do not have an estrus (heat) cycle with regular periods of heat (estrus), as do other small animals like dogs or cats. In fact, adult female rabbits are considered to be more or less always in estrus and are "reflex ovulators". This means that ovulation is induced only after coital



E. van Praag



VEIN (Veterinary Exotic Information Network) System, Copyright © Akira Yamanouchi

Left: Reproductive organs of the female rabbit
Right: View of the ovaries, uterine horns and part of the vagina, during a ovariohysterectomy operation.



stimulation and happens automatically 9 to 13 h after the copulation act.

A certain cycle does nevertheless exist. The presence of the estrogen hormone will influence the size and the color of the vulva. Most female rabbits are receptive to a male and prone to mate when their vulva is colored reddish/purple, and will refuse to mate when their vulva is pale and small. This is no clear indication though, as some female rabbits will mate when their vulva is pale and small.

To avoid problems related to mating, health (ovarian adenocarcinoma, endometritis) or/and unwanted litter, ovariohysterectomy is recommended, starting at the age of 6 months. The breed of the rabbit must be taken into account, before performing the operation.

Acknowledgements

Thanks are due to Akira Yamanouchi, for the permission to use the pictures from VEIN (Veterinary Exotic Information Network, <http://vein.ne.jp/>).

Further information

1. Elizabeth V. Hillyer, Katherine Quesenberry, Sandra Valkoff (1997) Ferrets, Rabbits and Rodents: Clinical Medicine and Surgery. Saunders W B Co., p. 230.
2. K. Laber-Laird, P. A. Flecknell, M. Swindle (1996) Handbook of Rodent and Rabbit Medicine. Elsevier Science, p. 243.
3. C . A Mc Laughlin, R. B. Chiasson (1990) Laboratory Anatomy of the Rabbit. McGraw Hill, p. 83.

The information and pictures on these pages may not be reproduced, or republished on another webpage, website, or elsewhere.

JULY 2003

