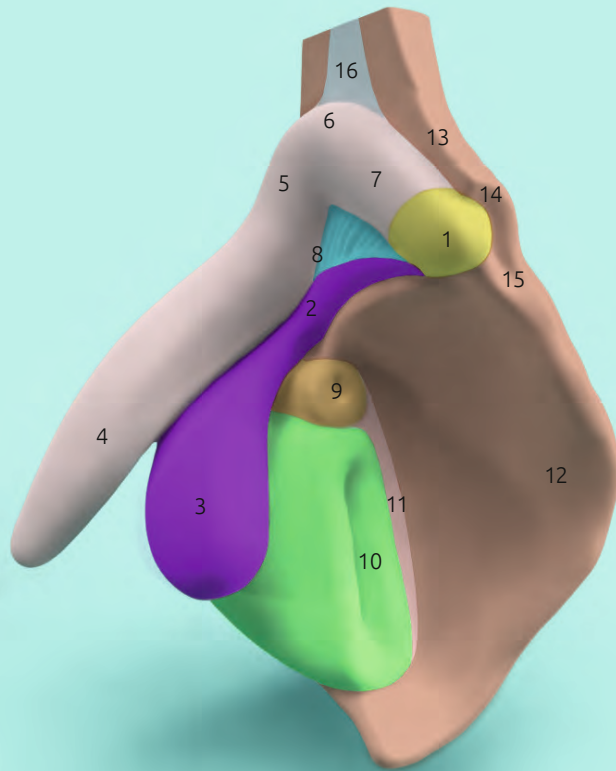


# Vulva Model

Prof. Dr. D. Haag-Wackernagel



## Beschreibung

- 1 Glans of clitoris *Glans clitoridis*
- 2 RSP (Infra-corporeal Residual Spongy Part)
- 3 Bulb of vestibule *Bulbus vestibuli*
- 4 Crus of clitoris *Crus clitoridis*
- 5 Body of clitoris ascending part  
*Corpus clitoridis pars ascendens*
- 6 Angle of the clitoral body
- 7 Body of clitoris descending part  
*Corpus clitoridis pars descendens*
- 8 Intermediate Network of Kobelt  
*Pars intermedia*
- 9 Urethra *Urethra feminina*
- 10 Vagina *Vagina*
- 11 Vestibule *Vestibulum vaginae*
- 12 Labia minora *Labium minus pudendi*
- 13 Prepuce of clitoris *Preputium clitoridis*
- 14 Clitoral hood
- 15 Frenulum of clitoris *Frenulum clitoridis*
- 16 Suspensory ligament of clitoris  
*Ligamentum suspensorium clitoridis*

The model „Vulva“ shows on the left side the isolated bulbo-clitoral organ (1-8) named after Di Marino & Lepidi (2014) as well as the urethra (9) and the underlying vagina (10). The right side shows the vaginal vestibule (11), the labia minora (12), the prepuce of clitoris (13), its free end, the clitoral hood (14), which is attached approximately in the middle of the glans, the frenulum of clitoris (15), and the suspensory ligament of clitoris (16) which inserts in the region of the clitoris angle and connects the bulbo-clitoral organ to the pubic symphysis and the infra-umbilical white line (linea alba).

The organ commonly referred to as the clitoris consists of various structures with differing characteristics and embryonic origin. The erectile cavernous bodies consist of a complex network of venous sinuses and a thick fibrous envelope, the tunica albuginea, enabling these bodies to fill with blood, increase in size and harden. It is formed by the crus of clitoris

(4) that merges into the ascending clitoral body (5), the clitoral angle (6) and the descending clitoral body (7). The cavernous structures show a high density of sensory nerve endings, called genital or bulbous corpuscles and Pacinian corpuscles. These corpuscles perceive tactile stimuli that are translated by the central nervous system into sensations of sexual excitement.

The spongy structures (corpus spongiosum) of the bulbo-clitoral organ include the glans of clitoris (1), the RSP (2) the vestibular bulbs (3), and the intermediate network of Kobelt, the pars intermedia (8). The only structure visible from the outside is the glans of clitoris, a cap-like formation on the tapered ends of the descending clitoral body. With its approximately 8,000 sensory nerve endings it is one of the most sensitive structures of the human body. It is exclusively dedicated to female sexual pleasure. Due to its embryonic origin, it is connected to the vestibular bulbs via the RSP.

The vestibular bulbs (3) „ride“ on the urethra (9) and the underlying vagina (10). They also consist of cavernous tissue but due to the absence of a true tunica albuginea and a sub-albugineal venous network, an erection is not possible.

The intermediate Network of Kobelt or pars intermedia (8) can be regarded as a blood distributor that connects the vascular structures of the bulbo-clitoral organ. Further venous connections from the pars intermedia exist to the labia minora (12), the clitoral frenulum (15), the vestibule (11), and the vascular tissue of the urethra (9) and the vagina (10).

The highly sensitive vaginal vestibule of vagina (11) is a part of the vulva that is located between the labia minora and the vaginal entrance where the Bartholin glands, the paraurethral glands (female prostata) and the minor vestibular glands open. These structures contribute to

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the lubrication of the vestibule and vagina during intercourse. The vagina (10) itself is only sparsely innervated and, as Kobelt already stated in 1844, should play no role in the generation of female sexual pleasure. During excitement the blood vessels of the vagina engorge with blood and secrete plasma as a lubricant protecting the vaginal tissue from injury.

The labia minora (12) splits into the clitoral frenulum (15) and the prepuce (13) that ends in the clitoral hood (14) which surrounds the clitoral glans (1). These structures, as well as the RSP (2), show a high density of sensory nerve endings, particularly around the clitoral glans, which makes this region the central spot for the generation of sexual arousal.

During sexual arousal arterial blood flow increases and simultaneously, the smooth muscle fibers of the vascular sinuses of the erectile tissues (4–7) relax, allowing them to engorge with blood. The resultant increased volume presses the sub-albugineal venous network against the tunica albuginea, blocking the drainage of blood and inducing a firming of the clitoral tissue. This leads to the elevation of the clitoral body and the protrusion of the clitoral shaft from the clitoral hood. When pressure is exerted on the vestibular bulbs (3) and the crus of clitoris (4), e.g. by the thrusting of the penis or the reflexive contractions of the muscles that surround these structures, blood is forced into the clitoral body and the clitoral glans via the pars intermedia. The increase in pressure leads to a lowering of the sensory receptor

activation threshold and a consequent activation of the numerous sensory nerve endings (genital corpuscles and corpuscles of Pacini) dedicated to generating sexual excitation, which ultimately leads to orgasm

Maintaining the integrity of the external genitalia is therefore of the utmost importance for female sexual health!

## Literature

Di Marino V & Lepidi H (2014). Anatomic Study of the Clitoris and the Bulbo-Clitoral Organ. 152 pp. Springer International Publishing Switzerland

Kobelt G L (1844) Die männlichen und weiblichen Wollustorgane des Menschen und einiger Säugethiere in anatomisch-physiologischer Beziehung (The male and female lust organs of humans and some mammals in anatomical-physiological relation). Freiburg im Breisgau, Druck und Verlag von Adolph Emmerling.

## Acknowledgement

I thank Prof. Dr. med. Vincent Di Marino (University of Aix-Marseille, Medical Faculty) for his valuable support.

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