



Development – A/P of Male and Female Patients



Sexual Maturation/Development Assessment

Tanner Stages/Tanner Scale

Sexual Maturation Assessment

- Sexual Maturation should be considered relative to patient age to determine if the patient should be an adult or pediatric examination.
- Tanner Staging should be completed prior to continuing the forensic examination to determine the appropriate actions

Sexual Maturation Assessment

- Criteria for Adolescent/Adult exam:
 - 13 years of age or older
 - Tanner stage 4 - 6

Sexual Maturation Assessment

- **Tanner Stages/Tanner Scale:**

- The **Tanner scale** (also known as the **Tanner stages**) is a scale of physical development in children, adolescents and adults. The scale defines physical measurements of development based on external primary and secondary development characteristics, such as the size of the **breasts, development of pubic hair (for females), genitalia, development of pubic hair (for males)**, and was first identified by James Tanner, a British pediatrician and thus bears his name.

Sexual Maturation Assessment

- **Tanner Stages Continued:**

- Due to natural variation, individuals pass through the Tanner stages at different rates, depending in particular on the timing of puberty (breasts/pubes hair)
- Tanner Stages/Tanner Scale is measured by observations made which correlate into stages on the scale based on development
- Breasts (1-5) and Pubic Hair (1-6)

Sexual Maturation Assessment

Female Development Assessment

M₁—Tanner 1 (preadolescent). Only the nipple is raised above the level of the breast, as in the child.



M₂—Tanner 2. Budding stage; bud-shaped elevation of the areola; areola increased in diameter and surrounding area slightly elevated.



M₃—Tanner 3. Breast and areola enlarged. No contour separation.



M₄—Tanner 4. Increasing fat deposits. The areola forms a secondary elevation above that of the breast. This secondary mound occurs in approximately half of all girls and in some cases persists in adulthood.



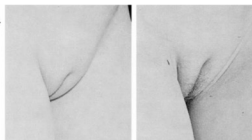
M₅—Tanner 5 (adult stage). The areola is (usually) part of general breast contour and is strongly pigmented. Nipple projects.



Sexual Maturation Assessment

Female Development Assessment

P₁—Tanner 1 (preadolescent). No growth of pubic hair.



P₂—Tanner 2. Initial, scarcely pigmented straight hair, especially along medial border of the labia.

P₃—Tanner 3. Sparse, dark, visibly pigmented, curly pubic hair on labia.



P₄—Tanner 4. Hair coarse and curly, abundant but less than adult.

P₅—Tanner 5. Lateral spreading; type and triangle spread of adult hair to medial surface of thighs.



P₆—Tanner 6. Further extension laterally, upward, or dispersed (occurs in only 10% of women).

FIG. 8.10 Six stages of pubic hair development in females. (From the Washington Post, 1975)

Sexual Maturation Assessment

Male Development Assessment

G₁—Tanner 1.
Testes,
scrotum, and
penis are the
same size and
shape as in
the young
child.



G₂—Tanner 2.
Enlargement
of scrotum and
testes. The
skin of the
scrotum
becomes
redder, thinner,
and wrinkled.
Penis no larger
or scarcely so.

G₃—Tanner 3.
Enlargement
of the penis,
especially in
length; further
enlargement of
testes; descent
of scrotum.



G₄—Tanner 4.
Continued
enlargement of
the penis and
sculpturing of
the glans;
increased
pigmentation
of scrotum.
This stage is
sometimes
best described
as "not quite
adult."

G₅—Tanner 5
(adult stage).
Scrotum
ample, penis
reaching
nearly to
bottom
of scrotum.



Sexual Maturation Assessment

Male Development Assessment

P₁—Tanner 1
(preadolescent).
No growth of
pubic hair; that
is, hair in pubic
area no different
from that on the
rest of the
abdomen.



P₂—Tanner 2.
Slightly
pigmented,
longer,
straight hair,
often still
downy;
usually at
base of penis,
sometimes on
scrotum.
Stage is
difficult to
photograph.

P₃—Tanner 3.
Dark,
definitely
pigmented,
curly pubic
hair around
base of penis.
Stage 3 can
be
photographed.



P₄—Tanner 4.
Pubic hair
definitely adult
in type but not
in extent (no
further than
inguinal fold).

P₅—Tanner 5
(adult
distribution).
Hair spread to
medial
surface of
thighs, but not
upward.



P₆—Hair
spread along
linea alba
(occurs in
80% of men).

Sexual Maturation Assessment

Pubic Hair Development Assessment

Male:

***Tanner I** – No pubic hair at all, prepubescent state, typically age 10 or younger

***Tanner II** – Small amount of downy hair with slight pigmentation at base of penis and scrotum, typical age 10 – 11.5 years of age

Female:

***Tanner I** – No pubic hair at all, prepubescent state, typically age 10 or younger

***Tanner II** – Small amount of downy hair with slight pigmentation on the labia majora, typical age 10 – 11.5 years of age

Sexual Maturation Assessment

Pubic Hair Development Assessment

Male:

***Tanner III** – Hair becomes more coarse and curly and begins to extend laterally, typically 11.5 – 13 years of age

***Tanner IV** – Adult-like hair quality extending across pubis but not yet found on medial thighs, typically 13 – 15 years of age

Female:

***Tanner III** – Hair becomes more coarse and curly and begins to extend laterally, typically 11.5 – 13 years of age

***Tanner IV** – Adult-like hair quality extending across pubis but not yet found on medial thighs, typically 13 – 15 years of age

Sexual Maturation Assessment

Pubic Hair Development Assessment

Male:

***Tanner V** – Hair extends to medial surface of thighs, typically 15+ years of age

***Tanner VI** – Hair extends superior to abd and further laterally to thighs

Female:

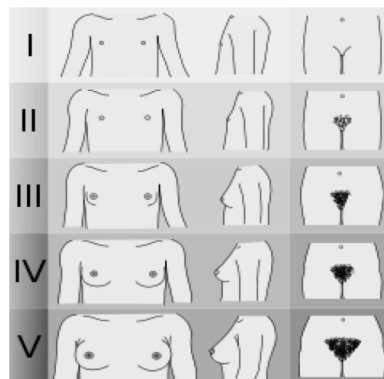
***Tanner V** – Hair extends to medial surface of thighs, typically 15+ years of age

***Tanner VI** – hair extends laterally to thighs more

Pubic Hair Maturation/Development the same in male and female patients

Sexual Maturation Assessment

Breast Development Assessment (Female)



Sexual Maturation Assessment

Breast Development Assessment (Female)

***Tanner I** – No glandular tissue; areola follows the skin contours of the chest (prepubescent), typically age 10 and younger

***Tanner II** – Breast bud forms, with small area of surrounding glandular tissue; areola begins to widen, typically age 10 – 11.5 years of age

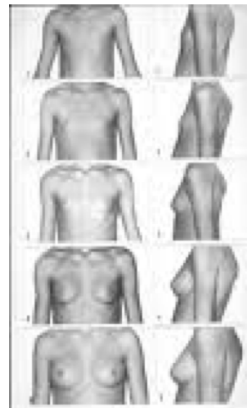
***Tanner III** – breast begins to become more elevated, and extends beyond the borders of the areola, which continues to widen but remains in contour with surrounding breast, typically 11 – 13 years of age

***Tanner IV** – increased breast size and elevation; areola and papilla form a secondary mound projecting from the contour of the surrounding breast, typically 13 – 15 years of age

Sexual Maturation Assessment






Breast Development Assessment (Female)

***Tanner V** – breast reaches final adult size; areola returns to contour of the surrounding breast, with a projecting central papilla, typically 15+ years of age



Sexual Maturation Assessment

Genitalia Development Assessment (Male)

I		3	<2.5
II		4	2.5-3.2
III		10	3.8
IV		16	4.1-4.5
V		25	>4.5

Sexual Maturation Assessment

Genitalia Development Assessment (Male)

***Tanner I** – prepubescent (testicular volume less than 1.5 ml; small penis of 3 cm or less), typically age 9 or younger

***Tanner III** – testicular volume between 6 and 12 ml; scrotum enlarges further; penis begins to lengthen to about 6 cm, typically 11 – 12.5 years of age

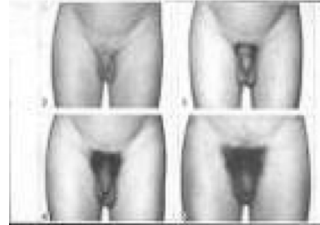
***Tanner II** – testicular volume between 1.6 and 6 ml; skin on scrotum thins, reddens and enlarges; penis length unchanged, typically 9 – 11 years of age

***Tanner IV** – testicular volume between 12 and 20 ml; scrotum enlarges further and darkens; penis increases in length to 10 cm and circumference, typically 12.5 – 14 years of age

Sexual Maturation Assessment

Genitalia Development Assessment (Male)

***Tanner V**-testicular volume greater than 20 ml; adult scrotum and penis of 15 cm in length, typically 14+ years of age



If the patient's current Tanner Stage is found to be inappropriate for adolescent/adult exam

Transfer the patient to a Pediatric Facility for a SANE-P Forensic Examination



Anatomy and Physiology

Detailed - Female Genitalia

External Genitalia

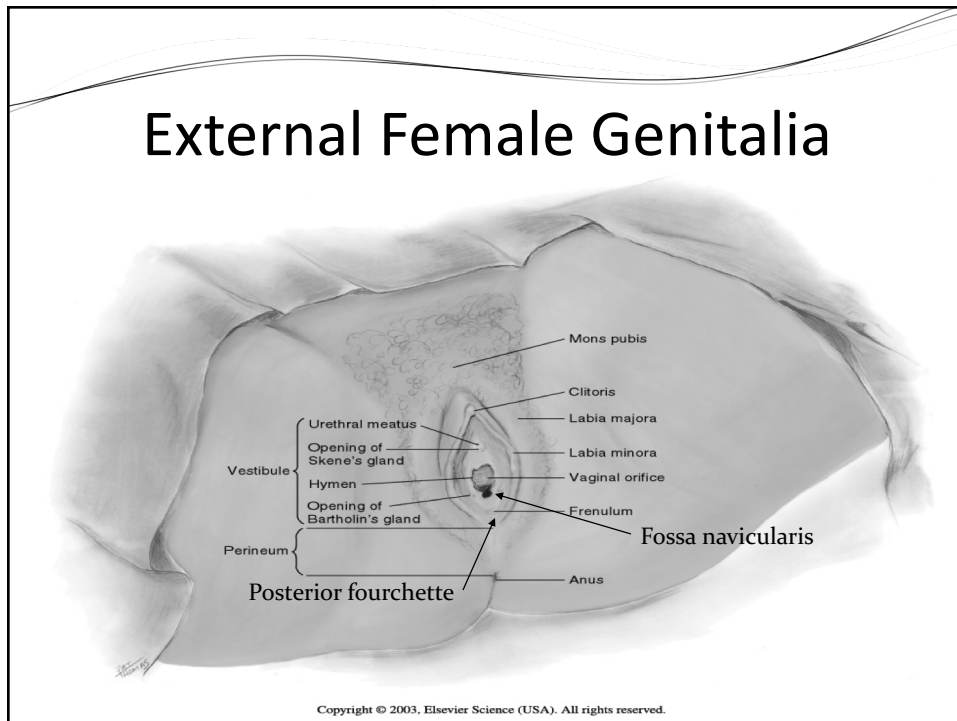
External Female Genitalia

- Normal Anatomy - vs – Abnormal Anatomy
- Anatomy Landmarks
- Disease Process
- Structural Differences

External Female Genitalia

- Sexual Assault Nurse Examiners should have a thorough knowledge of female anatomy and physiology to interpret normal versus abnormal, injury versus non injury and pertinent findings during the forensic examination.

External Female Genitalia



External Female Genitalia

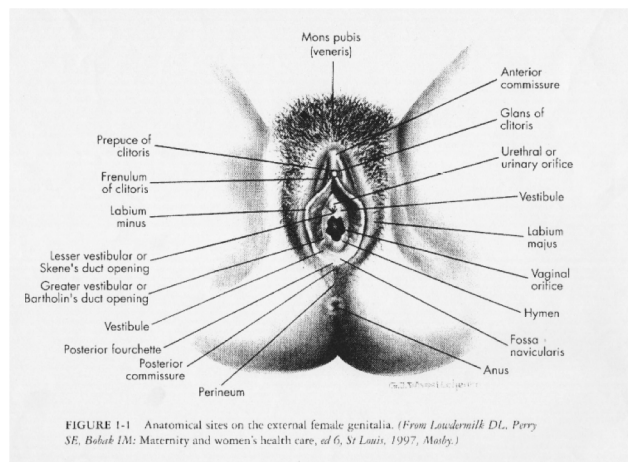


FIGURE 1-1 Anatomical sites on the external female genitalia. (From Lowdermilk DL, Perry SE, Bohak IM: Maternity and women's health care, 6th ed, St Louis, 1997, Mosby.)

External Female Genitalia

- | | |
|-------------------|---------------------------------|
| ❖ Mons Pubis | ❖ Fossa Navicularis |
| ❖ Labia Majora | ❖ Posterior Fourchette |
| ❖ Labia Minora | ❖ Vestibule |
| ❖ Clitoris | ❖ Skene's Gland |
| ❖ Hymen | ❖ Bartholin's Gland |
| ❖ Urethral Meatus | ❖ Anterior/Posterior Commissure |
| ❖ Perineum | |

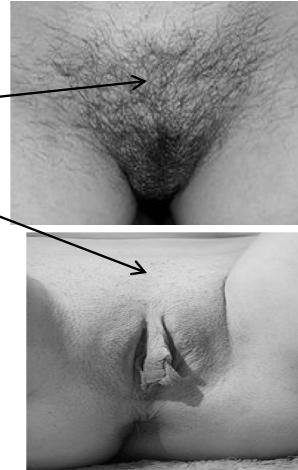
External Female Genitalia

Mons Pubis

- The **Mons Pubis**, also known as the mons veneris or simply the **mons**, is the adipose tissue lying above the pubic bone of adult females, anterior to the symphysis pubis. The mons pubis forms the anterior portion of the vulva.
- The size of the *mons pubis* varies with the general level of hormone and body fat. After puberty it is covered with pubic hair and enlarges. In females this mound is made of fat and is supposed to be larger when compared to males. It provides protection to the pubic bone.
- The *mons pubis* divides into the labia majora on either side of the furrow, known as the cleft of venus, that surrounds the vaginal opening, and other structures of the vaginal vestibule. The fatty tissue of the *mons pubis* is sensitive to estrogen, causing a distinct mound to form with the onset of puberty. This pushes the forward portion of the *labia majora* out and away from the pubic bone.

External Female Genitalia

Mons Pubis

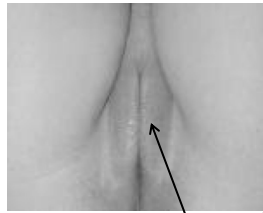


External Female Genitalia

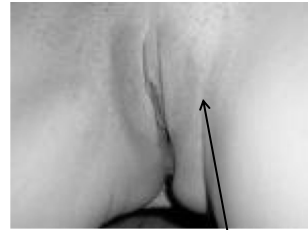
Labia Majora

- The **Labia Majora** are two prominent longitudinal cutaneous folds which extend downward and backward from the mons pubis to the perineum and form the lateral boundaries of the cleft of venus, which contains the labia minora clitoral hood, frenulum, vestibule and other anatomy which contains the external openings of the urethra and the vagina.
- Each labium majora fold has two surfaces, an outer, pigmented and covered with strong, crisp hairs; and an inner, smooth and beset with large sebaceous follicles.
- Between the two there is a considerable quantity of areolar tissue, fat, and a tissue resembling the dartos tunic of the scrotum, besides vessels, nerves and glands.
- The Labia Majora are thicker in front, where they form by their meeting the anterior commissure of the labia majora.
- Between the labia majora and the inner thighs are the labiocrural folds.
- Between the labia majora and labia minora are the interlabial sulci.

External Female Genitalia



Labia Majora



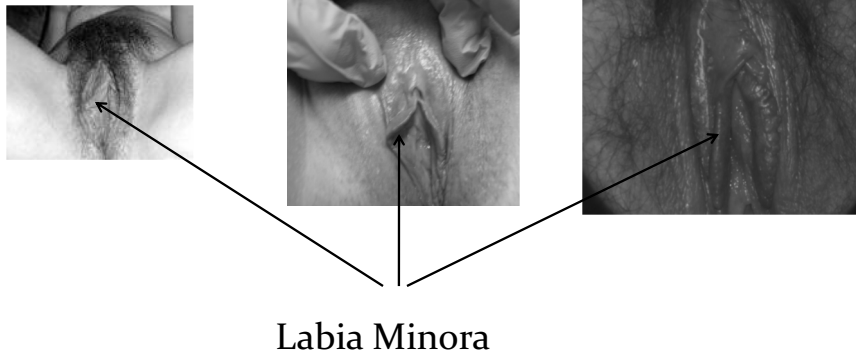
Labiocrural Folds

External Female Genitalia

Labia Minora

- The **Labia Minora** are two longitudinal cutaneous folds. They are situated between the labia majora, and extend from the clitoris obliquely downward, laterally, and backward on either side of the vestibule, ending between bottom of the vulval vestibule and the labia majora. Labia minora may vary widely in size from woman to woman.
- On the front, each labium minus divides into two portions: the upper division passes above the clitoris to meet the labium minus of the opposite side—which may not be equal in size—forming a fold which overhangs the glans clitoridis; this fold is named the preputium clitoridis. The lower division passes beneath the glans clitoridis and becomes united to its under surface, forming, with the labium minus of the opposite side—which also may not be equal in size—the frenulum clitoridis.
- On the opposed surfaces of the labia minora are numerous sebaceous follicles.

External Female Genitalia



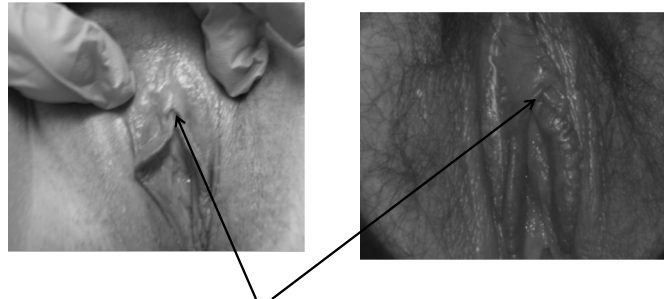
Labia Minora

External Female Genitalia

Clitoris

- The **clitoris** is a visible button-like portion is located near the anterior junction of the labia minora, above the opening of the urethra and vagina.
- The clitoris is the most sensitive erogenous area of the female, the stimulation of which may produce clitoral erection.

External Female Genitalia



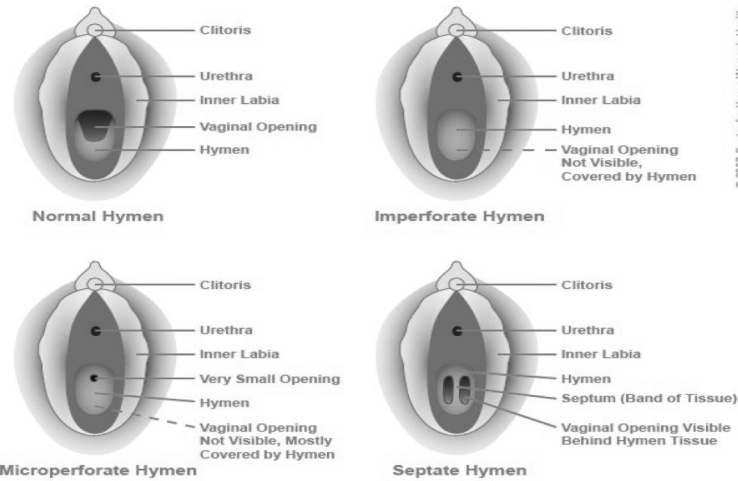
Clitoris

External Female Genitalia

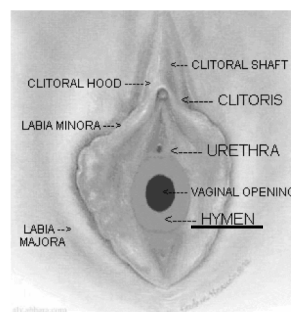
Hymen

- The Hymen is a fold of mucous membrane tissue that surrounds or partially covers the external vaginal opening. It forms part of the vulva or external genitalia.
- In cases of suspected rape or sexual abuse, a detailed examination of the hymen may be carried out; but in rare instances the condition of the hymen alone is often inconclusive or open to misinterpretation, especially if the patient has reached puberty. In children, although a common appearance of the hymen is crescent-shaped, many variations are possible.
- After a woman who is Para 1+, she may be left with remnants of the hymen, called *carunculae myrtiformes*, or the hymen may be completely absent
- There are NUMEROUS variations of hymen presentations:

External Female Genitalia



External Female Genitalia



This is a perfect annular hymen. It is called **annular** because the hymen forms a ring around the vaginal opening. As the hymen starts to erode from sexual or other activity, the hymen becomes less ring-like.

External Female Genitalia



Introductory Penetration to hymen

Example of hymen with little penetration
into vaginal cavity may appear as above

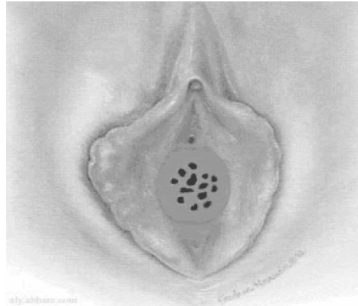
External Female Genitalia



Hymen penetrated by object

Pattern on hymen may be from an object used.
Notice the pattern on the lower half of the hymen.

External Female Genitalia



Cribriform Hymen

Characterized by numerous small holes

External Female Genitalia



Imperforate Hymen

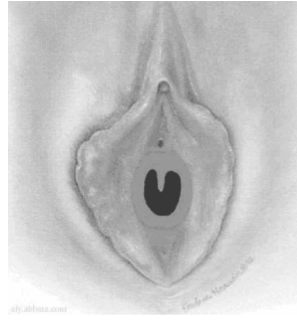
Average of 1 in 2000 female births are born with an imperforate hymen. Generally surgery is performed to create an opening in the hymen.

External Female Genitalia



Septate Hymen

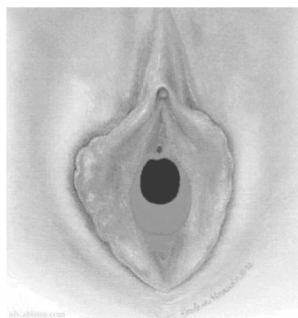
Resembles Nasal Septum



Sub-Septate Hymen

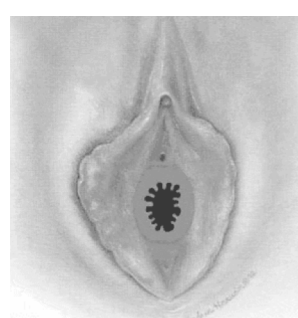
Very rare, similar to septate hymen without full closure of septate tissue

External Female Genitalia



Crescent Shaped Hymen

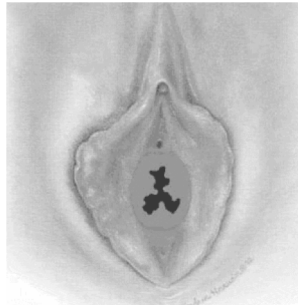
Forms a crescent shape, like a half moon, above or (as in this case) below the vaginal opening.



Denticular Hymen

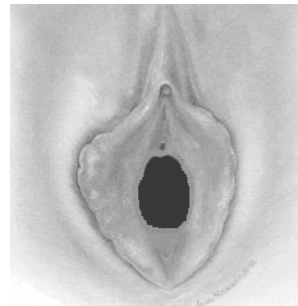
Named due to teeth-like pattern, may be confused with fimbriated hymen

External Female Genitalia



Fimbriated Hymen

Irregular pattern



Post Para Hymen

Post vaginal birth, hymen is barely visible

External Female Genitalia



Fimbriated Hymen

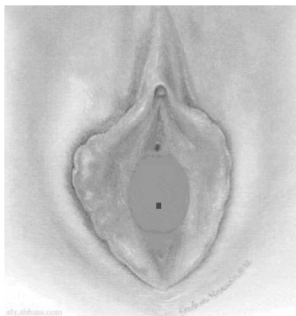
Irregular pattern

External Female Genitalia



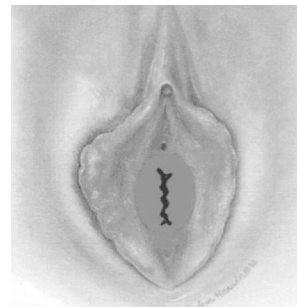
Post Para Hymen -VS- Annular Hymen

External Female Genitalia



Micro-perforated hymen

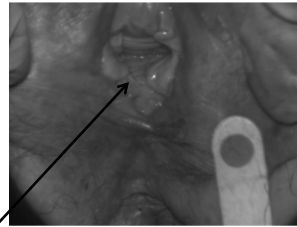
Similar to imperforate hymen, may only have small hole. Surgery is generally performed



Longitudinal Fimbriated Hymen

Irregular pattern with longitudinal opening to vaginal cavity

External Female Genitalia



Hymen

External Female Genitalia



Estrogenized Hymen



Non Estrogenized Hymen

External Female Genitalia

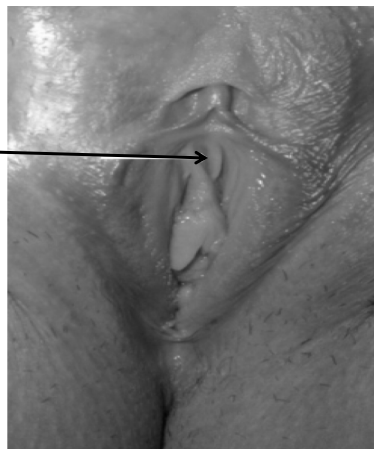
Urethral Meatus

- The Urethral Meatus is the external opening of the urethra, from which urine is ejected during urination. It is placed about 2.5 cm behind the clitoris and immediately in front of that of the vagina; it usually assumes the form of a short, sagittal cleft with slightly raised margins.
- To its left and right are the openings of the Skene's Ducts.

External Female Genitalia

Urethral Meatus

Urethral Meatus



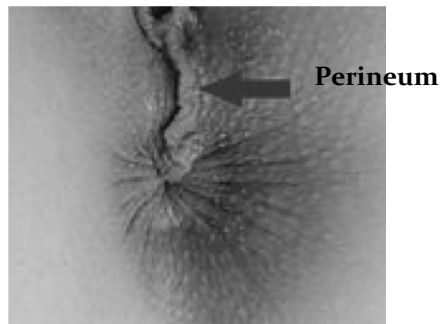
External Female Genitalia

Perineum

- The **Perineum** is the region of the body inferior to the pelvic diaphragm and between the legs. It is a diamond-shaped area on the inferior surface of the trunk which includes the anus and, in females, the vagina.
- The perineum is generally defined as the surface region in both males and females between the pubis symphysis and the coccyx.

External Female Genitalia

Perineum



External Female Genitalia

Fossa Navicularis

- The **Fossa Navicularis** is a boat-shaped depression between the vagina/hymen and the frenulum.

External Female Genitalia

Fossa Navicularis



Notice the boat shaped depression

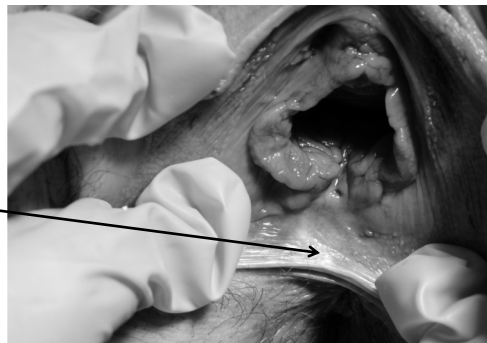
External Female Genitalia

Posterior Fourchette

- The **Posterior Fourchette** is the point where the labia minora meet posteriorly and fuse together. It is only present after puberty.
- The posterior ends of the labia minora and the labia majora join creating a raised ridge of mucosal skin, this is the frenulum of the labia or posterior fourchette. It is located at the opposite end of the labia from the clitoris

External Female Genitalia

Posterior Fourchette



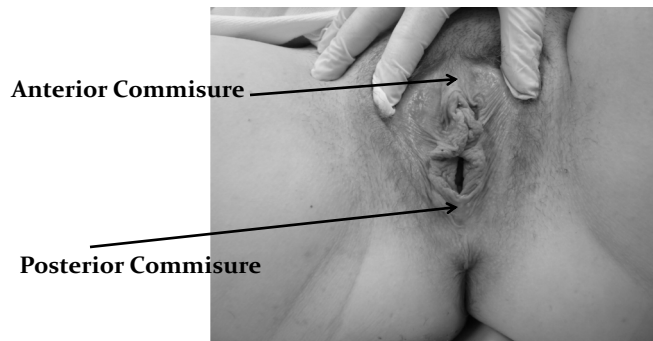
External Female Genitalia

Anterior/Posterior Commisure

- The Labia Majora are thicker in front, where they form by their meeting the anterior commisure of the labia majora.
- Posteriorly they are not really joined, but appear to become lost in the neighboring integument, ending close to — and nearly parallel with — each other.
- Together with the connecting skin between them, they form the posterior commisure of the labia majora.

External Female Genitalia

Anterior/Posterior Commisure



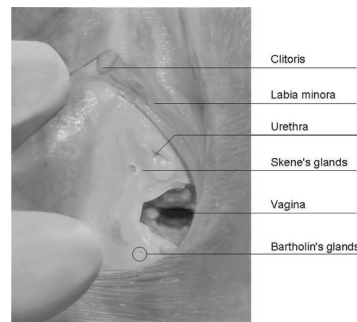
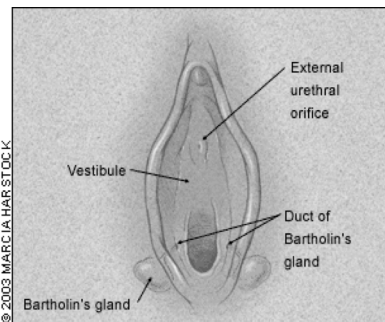
External Female Genitalia

Bartholin's Glands

- The **Bartholin's glands** (also called **Bartholin glands** or **greater vestibular glands**) are two glands located slightly below and to the left and right of the opening of the vagina. They secrete mucus to lubricate the vagina and are homologous to bulbourethral glands in males. Bartholin's glands are located in the superficial perineal pouch in females.

External Female Genitalia

Bartholin's Glands



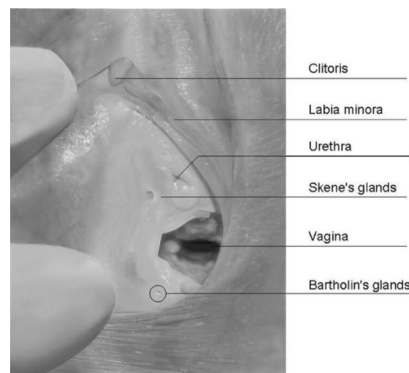
External Female Genitalia

Skene's Glands

- **Skene's glands** (also known as the **lesser vestibular glands**) are glands located on the anterior wall of the vagina, around the lower end of the urethra. They drain into the urethra and near the urethral opening. These glands are surrounded with tissue, which includes the part of the clitoris.

External Female Genitalia

Skene's Glands



External Female Genitalia

Anal Anatomy

- There is considerable variation between individuals in the appearance of the anus, including:
 - degree of pigmentation;
 - symmetry of the structures;
 - rugal patterns;
 - tone of the anal sphincter;
 - prominence and distribution of the vascular structures.
- Anal anatomy does not change with puberty, except for the appearance of pubic-like hair that can surround the external anal tissues and darker pigmentation.

External Female Genitalia

Anal Anatomy

