

# NORMAL HUMAN SEXUALITY

# Introduction of Human Sexuality

- Sexuality is determined by anatomy, physiology, the culture in which a person lives, relationships with others, and developmental experiences throughout the life cycle.
- It includes the perception of being male or female and private thoughts and fantasies as well as behaviour.
- Normal sexual behaviour brings pleasure to oneself and one's partner, involves stimulation of the primary sex organs including coitus.

# History

- Cultural mores regarding sexual behaviour have varied throughout the history of Western civilization.
- Attitudes have oscillated between the liberal and the puritanical, between the acceptance and the repression of human sexuality.
- Since the 1960s, the prevalent attitudes toward sex have been markedly liberal. However, recent studies indicate a trend toward accepting more conservative values.
- That shift is attributed largely to the fear of acquired immunodeficiency syndrome (AIDS).

# History

- 40 percent of Americans are concerned about contracting AIDS and are altering their sexual behaviour because of that fear.
- In 1997 the rate of teenage pregnancy declined for the first time in 40 years, and, in 1998, the number of teenagers who had sexual intercourse fell below 50 percent for the first time in a decade.

# History

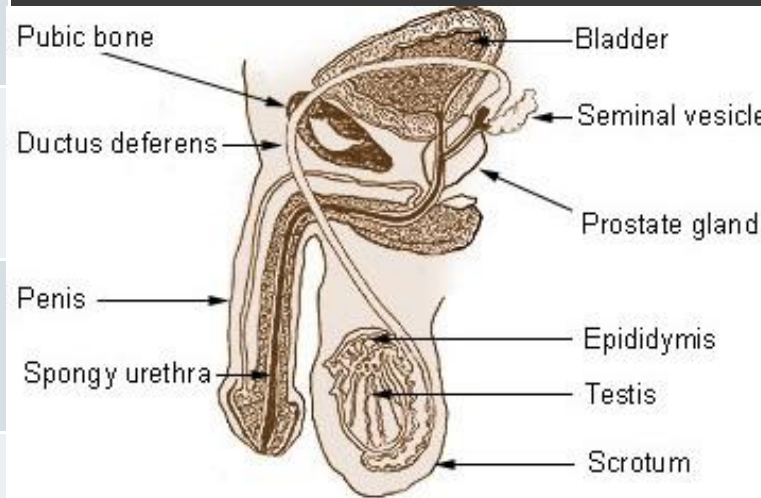
- Currently, one in five teenagers has sex before the age of 15 years.
- Oral sex is a popular sexual activity that is substituted for intercourse by many teens.
- The permissive legacies of the sexual revolution of the 1960s and 1970s exert a strong effect on current sexual behaviour.
- The feminist movement attacked the double standard for acceptable sexual behaviour for men and women.

# History

- The revolution encouraged women to accept sexual responsibility for the gratification of their needs.
- It challenged society to re-evaluate stereotyped male and female roles.
- The women's movement also focused attention on rape and incest.
- Middle-class adolescents became sexually active.
- Gay rights groups urged acceptance of their sexual orientation and succeeded in 1980 when homosexuality was dropped as a diagnostic category in DSM-III.

# Male Anatomy

External genitalia	Internal genitalia
penis	vas deferens
scrotum	ejaculatory ducts,
testes	prostate gland.
epididymis	
parts of the vas deferens.	



Freud referred to the penis as the executive organ of sexuality.

# Male Anatomy

- **Circumcision**, a procedure in which the prepuce is surgically removed.
- In 1999 the American Academy of Pediatrics recommended that male circumcision not be performed as a routine procedure except for religious reasons.
- Recent studies have found that AIDS is more readily transmitted by uncircumcised men.



# Male Anatomy

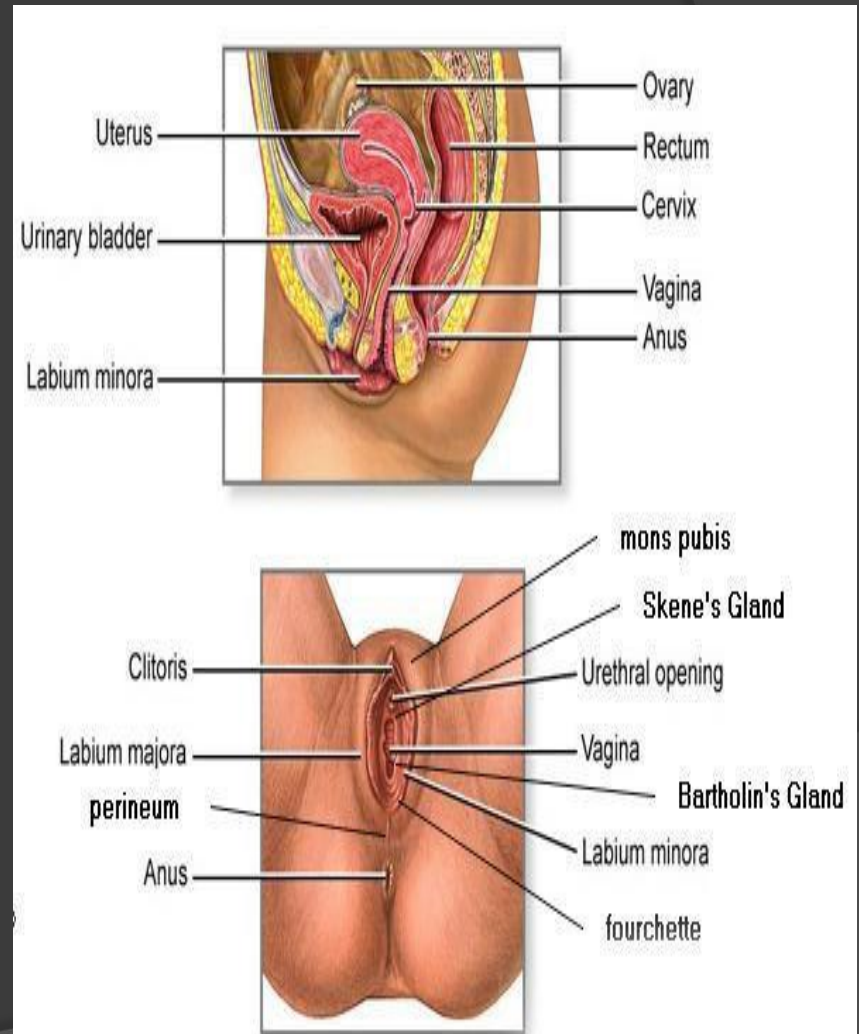
- **Ejaculation** is the forceful propulsion of semen and seminal fluid from the epididymis, vas deferens, seminal vesicles, and prostate into the urethra.
- The dilation of the prostatic urethra and the passage of fluid into the penile urethra provide the man with a sensation of impending climax, the emission phase of the ejaculatory process.
- Once the prostate contracts, ejaculation is inevitable.

# Male Anatomy

- The ejaculate is then propelled through the penile urethra by contractions of the striated pelvic and perineal muscles.
- This phase of ejaculation is essentially under somatic efferent control.
- The ejaculate consists of approximately 1 teaspoon (2.5 mL) of fluid and contains approximately 120 million sperm cells.

# Female Anatomy

External genitalia	Internal genitalia
Mons pubis	Ovaries
Labium majora	Fallopian tubes
Labium minora	Uterus
Clitoris	Vagina
Glans	
Vestibule of the vagina	
Vaginal orifice	



# Female Anatomy

- Hippocrates first described the clitoris in the medical literature, referring to it as the site of sexual excitation.
- Anatomically, the clitoris has a nerve net that is proportionally three times as large as that of the penis.

# Female Anatomy

- In 1950 Ernst Graefenberg described an area surrounding the female urethra in the anterior wall of the vagina that has come to be called the **G spot**.
- Approximately .5 to 1.0 cm in size, it becomes engorged during sexual stimulation.
- Many women report that stimulation of the area is highly pleasurable and, in some, can induce orgasm.

# Innervation of Sex Organs

- Innervations of the sexual organs is mediated primarily through the autonomic nervous system (ANS).
- Penile tumescence occurs through the synergistic activity of two neurophysiologic pathways.
- A parasympathetic (cholinergic) component mediates reflexogenic erections via impulses that pass through the pelvic splanchnic nerves (S2, S3, and S4).
- A thoracolumbar, mainly sympathetic pathway transmits psychologically induced impulses.

# Innervation of Sex Organs

- Both parasympathetic and sympathetic mechanisms are thought to play a part in relaxing the smooth muscles of the penile corpora cavernosa, which allows the penile arteries to dilate and causes the inflow of blood that results in penile erection.
- Relaxation of cavernosal smooth muscles is aided by the release of nitric oxide, an endothelium-derived relaxing factor.
- Clitoral engorgement & vaginal lubrication also result from parasympathetic stimulation that increases blood flow to genital tissue.

# Endocrinology

- **Testosterone** increases libido in both men and women.
- **Oxytocin** is involved in pleasurable sensations during sex and is found in higher levels in men and women following orgasm. It reinforces pleasurable activities.
- **Estrogen** is a key factor in the lubrication involved in female arousal and may increase sensitivity in the woman to stimulation. Low estrogen level cause decreased vaginal lubrication & vaginal atrophy.
- **Progesterone** mildly depresses desire in men and women as do excessive prolactin and cortisol.



# Genetics

- Involved in gonadal differentiation, resulting in the formation of the bipotential gonad into either a testis or ovary.
- The best-defined gene in this process is **SRY** (sex-determining region of the Y chromosome), located on the short arm of the Y chromosome.
- Other genes also play a smaller role, such as **SOX9**, **DAX1**, **WT1** (Wilms' tumor 1), **SF-1** (steroidogenic factor 1), and **MIS-12** (müllerian inhibiting substance 12).
- Defects or mutations in these genes cause failures in gonadal differentiation that produce clinical syndromes known as **intersex disorders**.

# Central Nervous System and Sexual Behaviour

**Cortex** : controlling sexual impulses and processing sexual stimuli that may lead to sexual activity.

- Orbitofrontal cortex- involved in emotions.
- Left anterior cingulate cortex- involved in hormone control and sexual arousal.
- Right caudate nucleus- whose activity is a factor in whether sexual activity follows arousal.

# Central Nervous System and Sexual Behaviour

**Limbic System** : Chemical or electrical stimulation of the lower part of the septum and the contiguous preoptic area, the fimbria of the hippocampus, the mammillary bodies and the anterior thalamic nuclei have all elicited penile erections in male.

- In case of female those area are related with orgasm.

# Central Nervous System and Sexual Behaviour

**Brainstem** : Exert inhibitory and excitatory control over spinal sexual reflexes.

- The **nucleus paragigantocellularis** projects directly to pelvic efferent neurons in the lumbosacral spinal cord, apparently causing them to secrete serotonin, which is known to inhibit orgasms.

# Central Nervous System and Sexual Behaviour

## **Brain Neurotransmitters :**

- An increase in dopamine is presumed to increase libido.
- Serotonin produced in the upper pons and midbrain is presumed to have an inhibitory effect on sexual function.
- Oxytocin, the neurohormone involved in the milk ejection reflex, is also released with orgasm and is believed to reinforce pleasurable activities.

# Central Nervous System and Sexual Behaviour

**Spinal Cord:** Sexual arousal and climax are ultimately organized at the spinal level.

- Sensory stimuli related to sexual function are conveyed via afferents from the pudendal, pelvic, and hypogastric nerves

# Genetic Differences

- Human cells contain 23 pairs of chromosomes for a total of 46.
- There are 22 pairs of autosomes and one pair of sex chromosomes.
- The sex chromosomes are the X (female) chromosome and the Y (male) chromosome. These chromosomes determine biological sex.
- Genetically, the normal male has a chromosomal 46XY karyotype and the normal female a 46XX karyotype.
- The X chromosome carries approximately 1,090 genes, while the human Y chromosome contains only about 80 genes.

# Psychosexuality

- The term **psychosexual** is used to describe personality development and functioning, as these are affected by sexuality. Psychosexual applies to more than sexual feelings and behaviour, and it is not synonymous with libido in the broad Freudian sense.
- Sexuality is something more than physical sex, coital or noncoital, and something less than all behaviors directed toward gaining pleasure.



## Psychosexual Factors

**Sexuality** depends on **four** interrelated psychosexual factors:

1. Sexual identity
  2. Gender identity
  3. Sexual orientation
  4. Sexual behavior.
- These factors affect personality, development, and functioning.

# Psychosexual Factors

**Sexual identity** is the pattern of a person's biological sexual characteristics: Chromosomes, external and internal genitalia, hormonal composition, gonads, and secondary sex characteristics.

**Gender identity** is a person's sense of maleness or femaleness. Gender identity results from an almost infinite series of clues derived from experiences with family members, peers, and teachers, and from cultural phenomena.

# Psychosexual Factors

**Sexual orientation** describes the object of a person's sexual impulses:

- **Heterosexual** (opposite sex)
- **Homosexual** (same sex)
- **Bisexual** (both sexes)
  
- In USA/European countries 2.8 percent of men and 1.4 percent of women identify themselves as homosexual.

# Psychosexual Factors

- **Sexual behaviour** includes desire, fantasies, pursuit of partners, autoeroticism, and all the activities engaged in to express and gratify sexual needs.

# Masturbation

- **Masturbation** usually is a normal precursor of object-related sexual behaviour and a form of sexual pleasure that generally lasts throughout a person's lifetime.
- No other form of sexual activity has been as universally practiced in spite of being severely condemned by many cultures for long periods of time.

# Masturbation

- In the classical period, Greco-Roman writers and medical authorities, such as Galen, recommended masturbation as a healthful practice for both men and women.
- Research by Kinsey in the 1940s into the prevalence of masturbation indicated that nearly **all men and three fourths of all women** masturbate sometime during their lives.

# Masturbation

- **Masturbation** is a psychopathological symptom only when it becomes a compulsion beyond an individual's wilful control.
- It is also symptomatic of sexual problems when it is the only sexual activity of a person who has an available intimate partner.
- **Masturbation** is a **universal** and **healthy** component of psychosexual development.

# Sexual Learning and Sexual Behaviour

- The sex drive is natural and varies in intensity in different people, but much sexual behaviour is learned.
- In the normal person, sexual learning and experimentation continue throughout the life cycle.



# Childhood

- Sexual learning begins in childhood.
- Learning occurs through **parent–child interaction**, including the **meeting of the infant's needs**, **cuddling**, and the **reinforcement** or discouragement of gender-associated activities.
- **Genital self-stimulation** is a normal activity of babies pronounced between the ages of 15 and 19 months, and it is part of the general interest of children in their bodies.
- The activity is reinforced by the **pleasurable sensations** it produces.

# Childhood

- Sexual learning in childhood is adversely affected by exploitative, abusive adults.
- **Incestuous activity**, with or without penetration, or sexual abuse by other adults is damaging to the child.
- Some children are **inappropriately stimulated** short of outright incest or genital fondling.
- They are the objects of extremely seductive parents. Termed **Eroticized children**, they frequently become sexually precocious.

# Adolescence

- With the approach of puberty, the upsurge of sex hormones, and the development of secondary sex characteristics, sexual curiosity is intensified.
- Adolescents are physically capable of coitus and orgasm but are usually inhibited by social restraints.
- Boys learn to masturbate to orgasm earlier than girls and masturbate more frequently.
- An important emotional difference between the adolescent and the younger child is the presence of coital fantasies during masturbation in the adolescent.

# Adolescence

- Boys respond to visual stimuli of nude or barely dressed women and images of explicit physical acts.
- Girls report responding to romantic stories in which a man demonstrates intense passion for and commitment to a woman.
- Their fantasies focus more on touching, emotions, and the partner's response rather than on visualizing an explicit sexual act.
- Peer acceptance by the same sex and by the opposite sex is of paramount importance.

# First Coitus

- The modal age for first coitus in the India is 17 years for both boys & girls. (TOI, Apr 16, 2012)
- In the past, virginity conferred status on the young person. Today, many young people feel embarrassed or inadequate if they are virgins.
- Many adolescents are choosing to have oral sex instead of coitus in their intimate relations.

# First Coitus

- For boys, anxiety about first coitus relates to performance. Will he be able to get an erection, to penetrate the vagina, to last for some period of time before he ejaculates?
- He is vulnerable in his masculine pride and may fear being judged as inadequate by his female partner and his male peers.
- First coitus for a girl has been surrounded by cultural ambivalence and concern about the meaning of her loss of virginity and her assumption of the risk of pregnancy and responsibility for the next generation.

# Adulthood

- By their late 20s, 70 percent of men and 85 percent of women have formed a union, either exclusive cohabitation or marriage.
- studies reveal a much higher frequency of sexual interaction among married persons than among single persons.
- Even after a permanent sexual relationship has been established, masturbation remains a healthy practice during the illness or absence of a partner or when intercourse is unsatisfactory.

# Middle Age

- During middle age, the frequency of marital intercourse decline.
- The rates of interaction depend more on male interest, and the middle-aged man may devote much of his energy to his career at this point.
- For women, interest in sexual competence typically increases at this time.
- A woman's erotic pleasure and sexual commitment are strongly connected to feelings of attachment toward her partner and the security of being in a loving relationship.



# Middle Age

- With late middle age, the biological drive decreases in intensity.
- It takes the man longer to reach orgasm, he has a longer refractory period, and he requires more stimulation to achieve an erection.
- The woman requires more stimulation to become aroused due to the hormonal fluctuations of her perimenopausal years.
- Middle age is the period of rising extramarital activity.

# Old Age

- An estimated 70 percent of men and 20 percent of women over age 60 years are sexually active.
- Approximately half of older sexually active people, aged 59 to 85, report one or more sexual dysfunctions.
- Women report problems of low desire, difficulty with lubrication, and inability to climax.
- Among men, erectile disorder is the most commonly reported dysfunction.
- About 14 percent of older men report using medications or supplements to improve their erections.

# Physiological Responses

- Normal men and women experience a sequence of physiological responses to sexual stimulation.
- William Masters and Virginia Johnson observed that the physiological process involves increasing levels of vasocongestion and myotonia (tumescence)
- The subsequent release of the vascular activity and muscle tone as a result of orgasm (detumescence).

# Physiological Responses

DSM-IV-TR defines a four-phase response cycle:

- Phase I: **Desire**
- Phase II: **Excitement**
- Phase III: **Orgasm**
- Phase IV: **Resolution**

# Phase I: Desire

- The desire phase, identified solely through physiology, reflects the psychiatric concern with **motivations, drives, and personality.**
- The phase is characterized by **sexual fantasies** and the **desire to have sexual activity.**

## Phase II: Excitement

- **The excitement and arousal phase, brought on by psychological stimulation (fantasy or the presence of a love object) or physiological stimulation ( Foreplays-stroking or kissing) or a combination of the two, consists of a subjective sense of pleasure.**

# Man's Genitals During Sexual Response Cycle

## Excitement

Full erection of penis

Partial erection

Unstimulated state

Testes elevate toward perineum

Skin of scrotum tenses, thickens, and elevates

## Plateau

Color of penile glans deepens

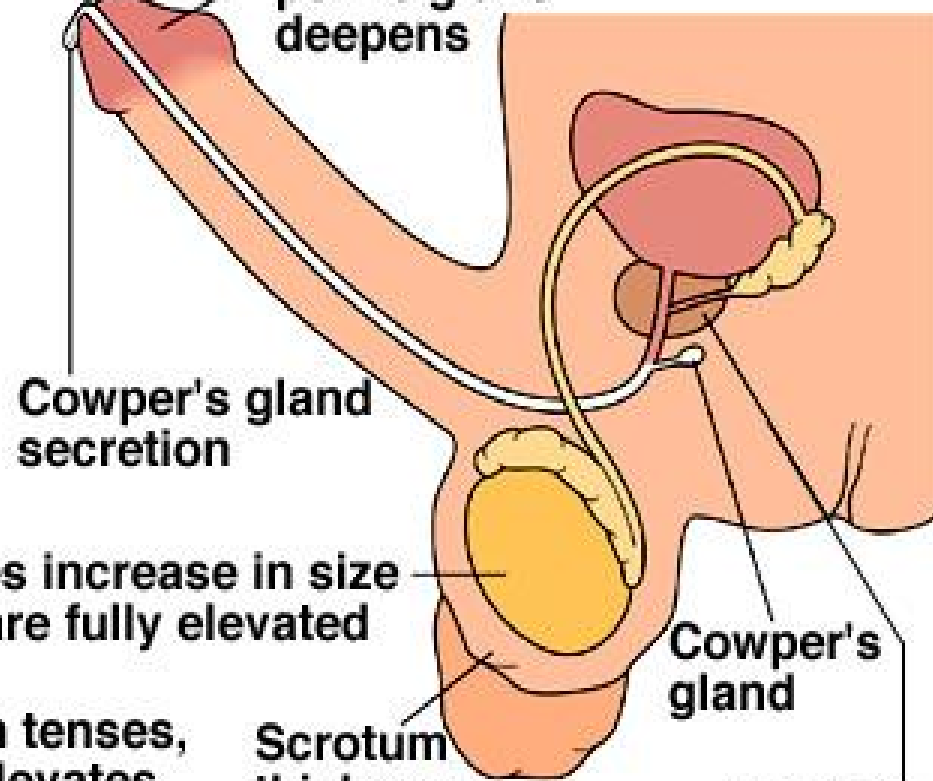
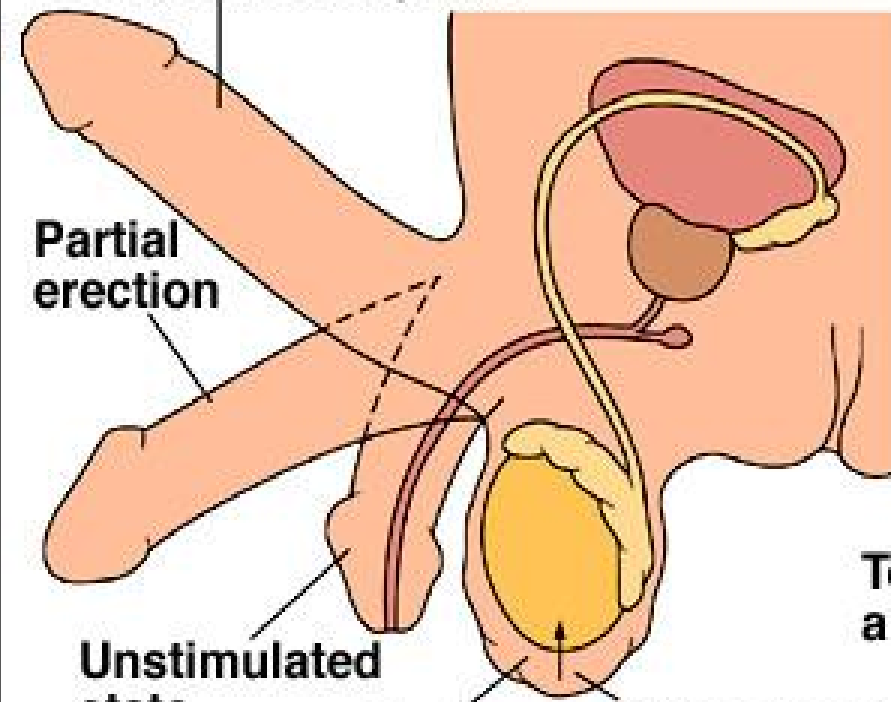
Cowper's gland secretion

Testes increase in size and are fully elevated

Scrotum thickens

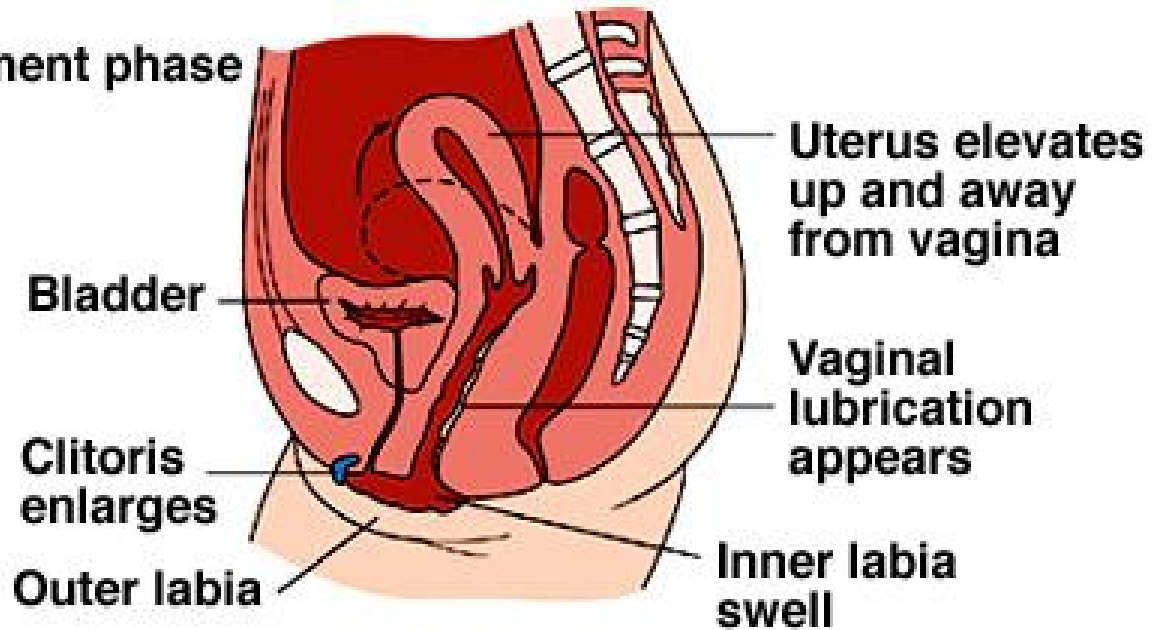
Cowper's gland

Prostate enlarges

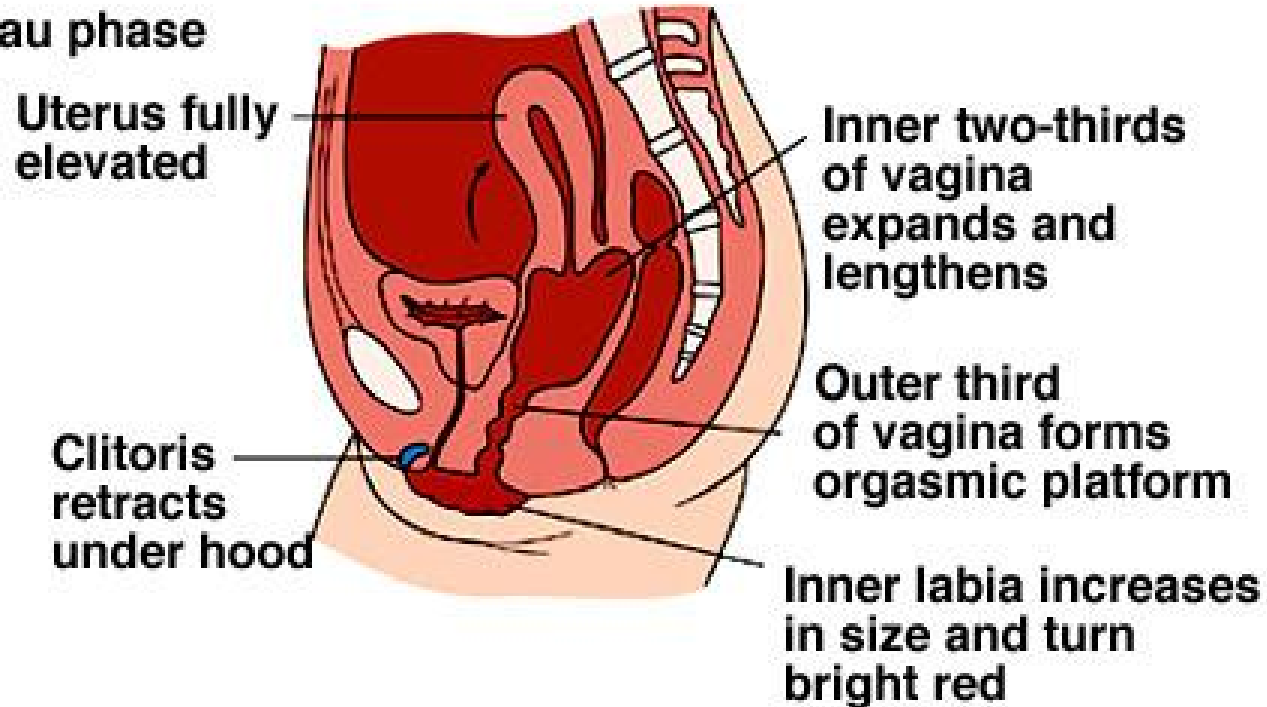


# Vagina, Uterus During Sexual Response Cycle

## 1. Excitement phase



## 2. Plateau phase





## Phase III: Orgasm

- **Peaking of sexual pleasure,**
- **Release of sexual tension**
- **Rhythmic contraction of the perineal muscles and the pelvic reproductive organs.**
- **A subjective sense of ejaculatory inevitability triggers men's orgasms. The forceful emission of semen. 4 to 5 rhythmic spasms of the prostate, seminal vesicles, vas, and urethra.**

## Phase III: Orgasm

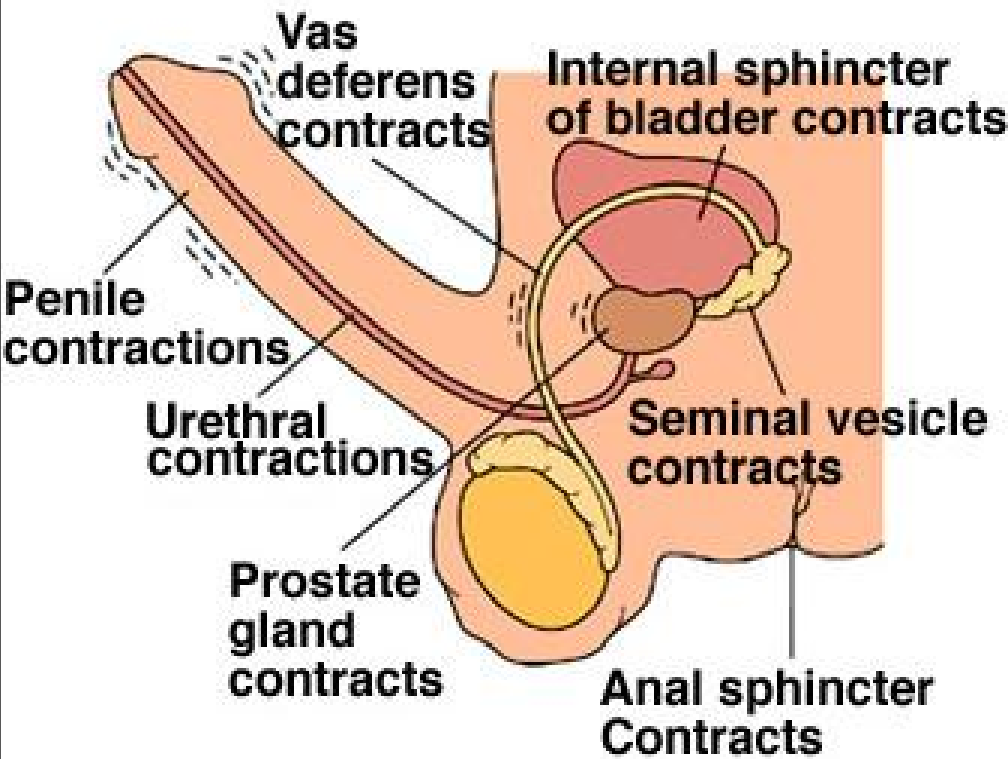
- In women, orgasm is characterized by **3 to 15 involuntary contractions of the lower third of the vagina and by strong sustained contractions of the uterus, flowing from the fundus downward to the cervix.**
- Both men and women have involuntary contractions of the internal and external anal sphincter.
- **Blood pressure rises 20 to 40 mm (both systolic & diastolic), and the heart rate increases up to 160 beats per minute.**
- Orgasm lasts from **3 to 25 seconds** and is associated with a slight clouding of consciousness.

## Phase IV: Resolution

- Resolution consists of the disgorgement of blood from the genitalia (detumescence). Body back to its resting state.
- **If orgasm occurs:** resolution is rapid, a subjective sense of well-being, general and muscular relaxation.
- **If orgasm does not occur :** resolution may take from 2 to 6 hours and may be associated with irritability and discomfort.
- After orgasm, men have a **refractory period** (several minutes to many hours) when they cannot be stimulated to further orgasm. Women do not have a refractory period and are capable of multiple and successive orgasms.

# Man's Genitals During Sexual Response Cycle

## Orgasm



## Resolution

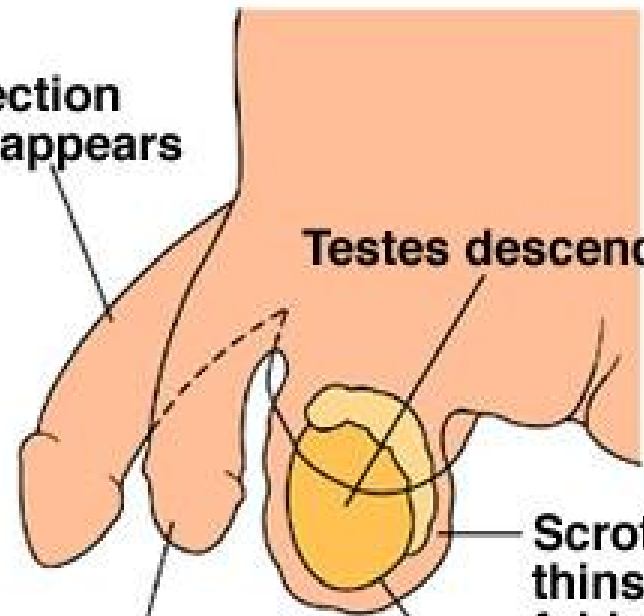
Erection disappears

Unstimulated state

Testes descend

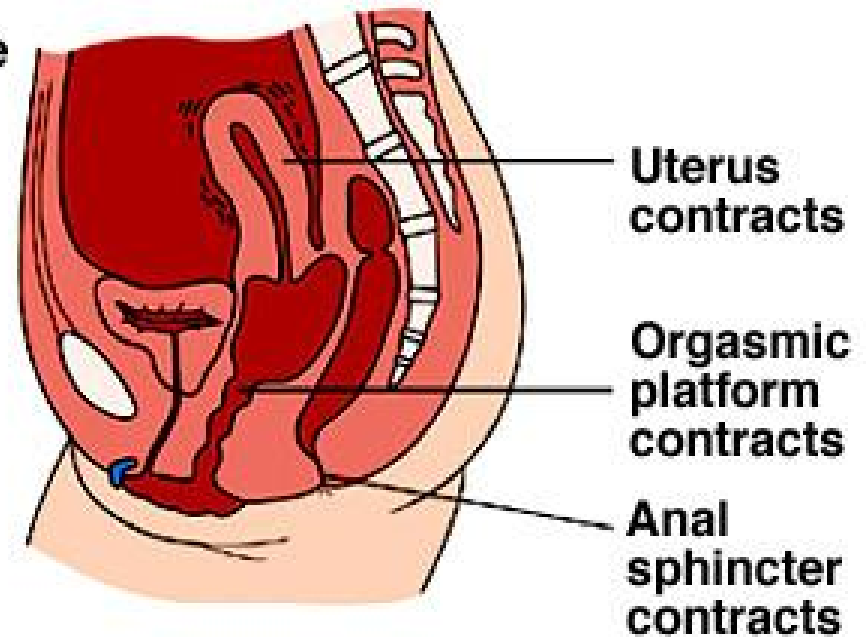
Scrotum thins and folds return

Loss of testicular congestion

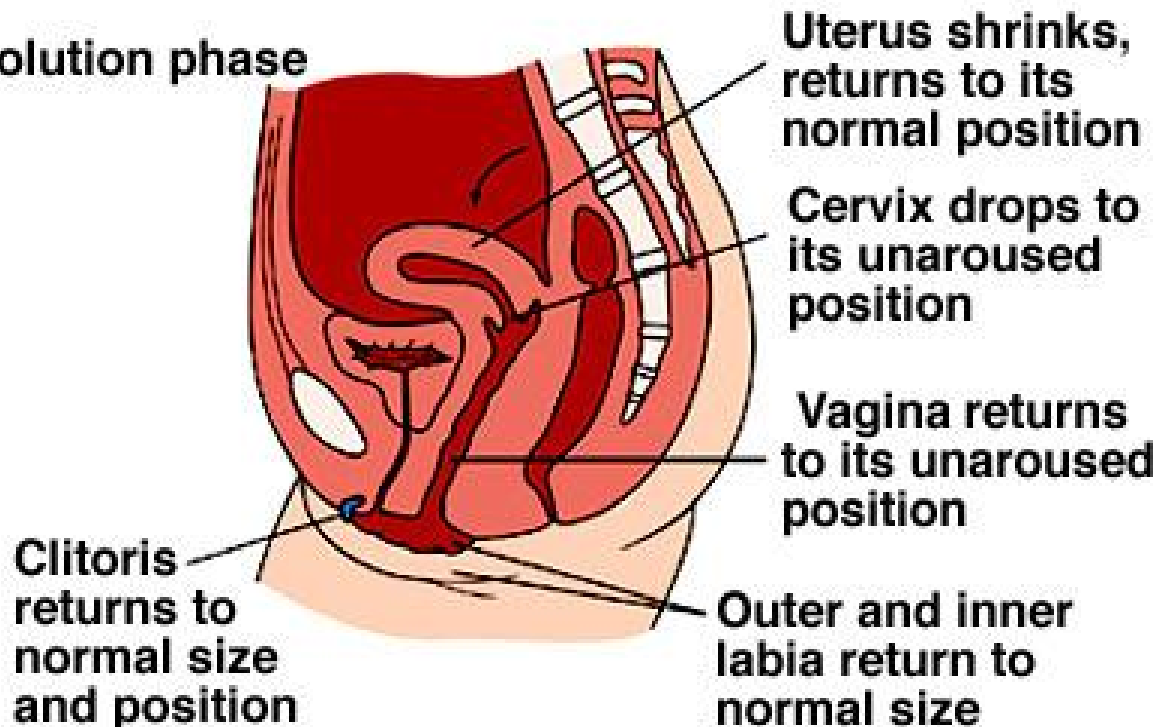


### 3. Orgasm phase

# Vagina, Uterus During Sexual Response Cycle



### 4. Resolution phase



# Male Sexual Response Cycle

Organ	Excitement Phase	Orgasmic Phase	Resolution Phase
<b>Skin</b>	Just before orgasm: sexual flush inconsistently appears; maculopapular rash originates on abdomen and spreads to anterior chest wall, face, and neck and can include shoulders and forearms	Well-developed flush	Flush disappears in reverse order of appearance; inconsistently appearing film of perspiration on soles of feet and palms of hands
<b>Penis</b>	Erection in 10 to 30 seconds caused by vasocongestion of erectile bodies of corpus cavernosa of shaft; loss of erection may occur with introduction of asexual stimulus, loud noise; with heightened excitement, size of glands and diameter of penile shaft increase further	Ejaculation: emission phase marked by three to four 0.8-second contractions of vas, seminal vesicles, prostate; ejaculation proper marked by 0.8-second contractions of urethra and ejaculatory spurt of 12 to 20 inches at age 18, decreasing with age to seepage at 70	Erection: partial involution in 5 to 10 seconds with variable refractory period; full detumescence in 5 to 30 minutes

# Male Sexual Response Cycle *Contd*

<b>Scrotum and testes</b>	<b>Tightening and lifting</b> of scrotal sac and elevation of testes; with heightened excitement, <b>50% increase in size of testes</b> over unstimulated state and flattening against perineum, signaling impending ejaculation	No change	<b>Decrease to baseline size</b> because of loss of vasocongestion; testicular and scrotal descent within 5 to 30 minutes after orgasm; <b>involution</b> may take several hours if no orgasmic release takes place
<b>Cowper's glands</b>	2 to 3 drops of <b>mucoid fluid</b> that contain viable sperm are secreted during heightened excitement	No change	No change

# Male Sexual Response Cycle *Contd*

## Other

**Breasts:** inconsistent nipple erection with heightened excitement before orgasm

**Myotonia:** semispastic contractions of facial, abdominal, and intercostal muscles

**Tachycardia:** up to 175 beats a minute

**Blood pressure:** rise in systolic 20 to 80 mm; in diastolic 10 to 40 mm

**Respiration:** increased

**Loss of voluntary muscular control**

**Rectum:** rhythmical contractions of sphincter

**Heart rate:** up to 180 beats a minute

**Blood pressure:** up to 40 to 100 mm systolic; 20 to 50 mm diastolic

**Respiration:** up to 40 respirations a minute



# Female Sexual Response Cycle

Organ	Excitement Phase	Orgasmic Phase	Resolution Phase
<b>Skin</b>	<b>Just before orgasm:</b> sexual flush inconsistently appears; maculopapular rash originates on abdomen and spreads to anterior chest wall, face, and neck; can include shoulders and forearms	Well-developed flush	Flush disappears in reverse order of appearance; inconsistently appearing film of perspiration on soles of feet and palms of hands
<b>Breasts</b>	<b>Nipple erection</b> in two thirds of women, venous congestion and areolar enlargement; size increases to one fourth over normal	Breasts may become <b>tremulous</b>	Return to normal in about <b>30 minutes</b>
<b>Clitoris</b>	<b>Enlargement in diameter</b> of glands and shaft; just before orgasm, shaft retracts into prepuce	No change	<b>Shaft returns to normal position in 5 to 10 seconds;</b> detumescence in 5 to 30 minutes; if no orgasm, detumescence takes several hours

# Female Sexual Response Cycle

<b>Labia majora</b>	<b>Nullipara:</b> elevate and flatten against perineum <b>Multipara:</b> congestion and edema	No change	<b>Nullipara:</b> decrease to normal size in 1 to 2 minutes <b>Multipara:</b> decrease to normal size in 10 to 15 minutes
<b>Labia minora</b>	<b>Size increased</b> two to three times over normal; change to pink, red, deep red before orgasm	Contractions of proximal labia minora	Return to normal within <b>5 minutes</b>
<b>Vagina</b>	<b>Color change</b> to dark purple; vaginal transudate appears 10 to 30 seconds after arousal; <b>elongation and ballooning</b> of vagina; lower third of vagina constricts before orgasm	3 to 15 contractions of lower third of vagina at intervals of 0.8 second	<b>Ejaculate</b> forms seminal pool in upper two thirds of vagina; congestion disappears in seconds or, if no orgasm, in 20 to 30 minutes

# Female Sexual Response Cycle

<b>Uterus</b>	<b>Ascends into false pelvis;</b> labor-like contractions begin in heightened excitement just before orgasm	<b>Contractions throughout orgasm</b>	<b>Contractions cease,</b> and uterus descends to normal position
<b>Other</b>	<b>Myotonia:</b> A few drops of mucoid secretion from Bartholin's glands during heightened excitement <b>Cervix swells</b> slightly and is passively elevated with uterus	<b>Loss of voluntary muscular Control</b> <b>Rectum:</b> rhythmical contractions of sphincter <b>Hyperventilation and tachycardia</b>	Return to baseline status in <b>seconds to minutes</b> <b>Cervix color and size return to normal,</b> and cervix descends into seminal pool

# Conclusion

- Sexual response is a true psychophysiological experience.
- Arousal is triggered by both psychological and physical stimuli, levels of tension are experienced both physiologically and emotionally, and, with orgasm, there is normally a subjective perception of a peak of physical reaction and release.
- Psychosexual development, psychological attitude toward sexuality, and attitudes toward one's sexual partner are directly involved with and affect the physiology of human sexual response.

# References

- Kaplan & Sadock's Comprehensive Textbook of Psychiatry.
- Byer/Shainberg/Galliano Dimensions of Human Sexuality 5<sup>th</sup> Edition.
- [www.google.com](http://www.google.com)

THANK  
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