# Human Sexual Motivation

## Lecture #10

**Biology 307**

Mark Sussman, PhD

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### Human Sexual Motivation

1. **Unusual Motivation**
   - referred to as "drive" in lower animals
   - inferred internal state influenced by multiple factors
   - determines engagement in sexual activity

2. **Problems collecting data on human sexuality**
   - private subject matter (e.g., "How do you masturbate?")
   - landmark study by Kinsey (1953) interviewed several thousand to determine what sexual behaviors, what age begun, how often engaging (caused furor)
   - landmark study by Masters and Johnson (1966) dispelled myth that female sexual response to intercourse was different from males, but rather due to subjective differences in culture and learning
   - both studies now outdated, collected on white, middle class volunteers
   - more recent studies refined to anonymity and representative population sampling may be more accurate (Laumann et al. 1994, Wellings et al. 1994)

3. **Factors in human sexual motivation**
   - Physiological correlates: hormones, odor and sense of smell, visual stimuli
   - Sexual orientation: influenced by combination of genes, hormones, environment
   - Pleasure: pursuit of pleasurable stimuli
   - Cognitions: how stimuli are interpreted influences motivation for sex
   - Attraction: proximity, familiarity, similarity, **appearance**
   - Learning: reinforcement of behaviors and tactics leading to success
   - Culture: society determines what is / is not appropriate sexual behavior
   - Attitudes: culturally derived influences that determine what is motivational (kissing, homosexuality, sado-masochism)
Events occurring in the stages of sexual response

Helen Kaplan’s three phase model

Kaplan’s Three-Phase Model

<table>
<thead>
<tr>
<th>Desire Phase</th>
<th>Vasocongestive Phase</th>
<th>Orgasmic-Release Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological components of sexual desire</td>
<td>Vasocongestion in pelvic region</td>
<td>Reversal of vasocongestion</td>
</tr>
<tr>
<td></td>
<td>Increased muscular tension in body</td>
<td>Release of muscular tension</td>
</tr>
</tbody>
</table>

• four phase model (Masters and Johnson) versus Kaplan’s three phase model
• Kaplan based upon body’s neurophysiological mechanisms
• sexual dysfunctions can be classified easily into which phase they occur (lack of desire, erectile dysfunction, painful intercourse)
• individual variations
• determinants for innate sexual desire very complex – poorly understood
• variation in duration of sexual activity from minutes to hours
• variation in duration of orgasm and intensity of experience
• is orgasm necessary for sexual satisfaction?
Mind / body interactions in sexual arousal

Peripheral Arousal System
- Stimuli from senses: touch, sight, sound, taste, smell
- Sensations from genitals
- Spinal cord reflexes
- Controlled cognitive processes

Central Arousal System
- Finding sexual meaning in thoughts, perceptions, fantasies, imagery, interpretations, appreciations
- Feedback

Sexual Response
- Genital response (erection, vaginal lubrication, etc.)
- Excitement of other systems: cardiovascular, muscular, respiratory
- Automatic cognitive processes (activating or deactivating)

Events in female excitement phase
- Uterus begins to elevate
- Inner one-third of vagina begins to distend
- Clitoris swells and elongates
- Labia enlarge
- Vagina begins to lubricate
**Events in female plateau phase**

- Uterus is fully elevated.
- Inner two-thirds of vagina distends and lengthens farther.
- Clitoris retracts under foreskin.
- Outer one-third of vagina and labia minora swell.

**Female orgasmic phase**

- Wavelike contractions of uterus.
- Muscular contractions of outer one-third of vagina and anus.
Female Sexual Response Controversies

1. Orgasms: clitoral versus vaginal, or both (blended)
   • Clitoral (vulval) - pudendal nerves
   • Vaginal (uterine) - pelvic nerves (cervical stimulation)

2. The “G” spot
   • Grafenberg originally identified
   • Sensitive area on inner front wall of vagina
   • Swells during arousal - stimulation prompts orgasm
   • Spongy tissue fills with blood - may take time to fill
   • Difficult to find for some women - not a magic button

3. Ejaculation
   • Grafenberg again - semen-like substance from urethra
   • Skene glands - female counterpart to prostate?
   • Linked to intensity of sexual experience
   • Remains controversial - societal concerns

Human biology difficult to research and make sweeping generalizations

Male excitement phase
Male plateau phase

- Glans penis becomes fully engorged and darker in color.
- Secretion from bulbourethral glands appears.
- Testes increase in size and elevate farther.
- Scrotum is pulled upward.

Male orgasmic phase

- Throbbing of penis with contractions.
- Ejaculation of semen.
- Testes at maximum elevation.
- Constrictions of vas deferens, ejaculatory muscles, prostate, and anus.
Multiple Orgasms: how many, how real?

1. Women
   - restimulated to orgasm during resolution phase
   - type of stimulation linked to frequency
   - biological basis?
   - variation between individuals, but conclusion is yes

2. Men
   - most men experience refractory period without orgasm
   - few cases suggest multi-orgasm w/o refractory period
   - younger men more likely to experience than older
   - uncoupling of ejaculation from muscle contractions?
   - without ejaculation, no refractory period
   - often hyped subject
   - biological basis?

Human biology difficult to research and make sweeping generalizations

Hormonal regulation of arousal and response

1. Women
   - variation over menstrual cycle
   - no apparent link to circulating hormone levels
   - may be a correlation in adolescent females
   - relatively little evidence for “hormonal sex drive”

2. Men
   - testosterone levels linked to adolescent sexual activity
   - difficult age to separate physiology from psychology
   - testosterone supplements may help sexual dysfunction?
   - testosterone levels rise after sexual intercourse
   - also rise watching sports (if your team is winning)
   - testosterone generally linked to physiological arousal
   - biological basis?

Human biology difficult to research and make sweeping generalizations
Hormones: organizing versus activating sex

1. Organizing events
   • patterning of reproductive organs in development
   • prenatal gender determination
   • postnatal adolescence and maturation
   • occurring relatively early in life

2. Activating events
   • influencing sexual desire?
   • evidence is mixed - androgens (male sex hormone)
   • testosterone may play key role in both male and female
   • males produce 10-15 times more testosterone
   • “activating switch” - levels don’t parallel desire
   • females much more sensitive to testosterone levels
   • estrogens seem to have little effect in females, but decrease sexual desire in males

Biological basis for hormonal drive may be evolutionary link?

Hormones, sex, and the brain

• prenatal testosterone exposure leads genetic females toward male behavioral traits (congenital adrenal hyperplasia)

• prairie voles - monogamy tied to vasopressin?

• cichlid fish - hypothalamus size linked to gonadotropin-releasing hormone (affected by socio-sexual behavior, tied to testes size)

Evidence indicates hormones influence both social and sexual behavior
Getting older, not necessarily better

Table 7.2  Effects of Aging on Female and Male Sexual Response

<table>
<thead>
<tr>
<th>Changes in the Aging Female</th>
<th>Changes in the Aging Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thinning of vaginal lining</td>
<td>Some atrophy of testicular tissue</td>
</tr>
<tr>
<td>Reduction in vaginal lubrication</td>
<td>Reduction in secretion of preiaculatory fluid and amount of semen produced</td>
</tr>
<tr>
<td>Increase in uterine cramping associated with orgasm</td>
<td>Testes do not elevate as much during sexual arousal</td>
</tr>
<tr>
<td>Increase in amount of time needed to experience sexual arousal and vaginal lubrication</td>
<td>Increase in amount of time needed to achieve full penile erection</td>
</tr>
<tr>
<td>Increase in time of stimulation required to reach orgasm, and fewer muscular contractions associated with orgasm</td>
<td>Increase in time of stimulation required to reach orgasm, and strength of orgasms: muscular contractions reduced</td>
</tr>
<tr>
<td>Resolution to unexcited state remains about the same</td>
<td>Resolution to unexcited state happens more quickly</td>
</tr>
<tr>
<td>Women who have been multigravid seem to retain the capability</td>
<td>Refractory period lengthens, so the time before a man may be restimulated to orgasm tends to increase</td>
</tr>
</tbody>
</table>

Source: W. Masters and V.E. Johnson, Human Sexual Response, 1966, Little, Brown and Company, Boston, MA. Reprinted by permission of Masters and Johnson Institute, St. Louis, MO.

There are, of course, exceptions to these trends.