Hormones and Sexuality
What Are Hormones?

And Why Are We Talking About Them?

**Definition**

- Chemical substances released into our blood stream by ductless glands
- Carried by the blood and exert their effects on other glands, organs, and body parts

**Take Home Message**

- Hormones (Especially Estrogen and Testosterone) play a huge role in “shaping” our bodies (the way we look, brain structures, psychological behaviors, and sexual functioning)
The Brief Glance At The Role Of Hormones

Testosterone

**Sexual Functioning**
- Sperm production
- Libido (sex drive)
- Frequency, duration, and rigidity of erections

**Secondary Sex Characteristics (Puberty)**
- Facial/body hair
- Deepening of the voice
- Phallic enlargement
- Increase in muscle mass

**Psychological Behaviors**
- Affects brain structures during fetal development
- Related to energy levels, mood, and concentration
- Aggression

**Men and Women**
- Men: produce 6 – 8 milligrams/day (testicles)
- Women: produce 0.5 milligrams/day (ovaries)
- Testosterone is responsible for the sex drive of both men and women
The Brief Glance At The Role Of Hormones

Estrogen

**Sexual Functioning**
- Increase the growth of the endometrium
- Vaginal lubrication

**Secondary Sex Characteristics (Puberty)**
- Accelerates growth in height
- Reduces muscle mass
- Accelerates the metabolism
- Increase growth of the breasts and hips

**Psychological Behaviors**
- Affects brain structures during fetal development
- Mood

**Men and Women**
- Men: produce estrogen in the testicles
- Women: produce estrogen in the ovaries
The Endocrine System

Reproductive Hormones

**The Big Picture**

- The hormones involved are responsible for our reproductive capabilities
- The brain releases hormones that affect the gonads
- The gonads release hormones that affect the brain
- The system acts on a negative feedback loop
  - like thermostat in a house: When the air reaches the right temp, the heater shuts off
The Endocrine System

Reproductive Hormones

**Gonadotropin-releasing hormone (GnRH)**

- Released by the hypothalamus in the brain
- Triggers the release of FSH and LH from the pituitary gland
The Endocrine System

Reproductive Hormones

**Follicle-Stimulating Hormones (FSH)**
- *gonadotropin* “Gonad-seeking”
- Released by the pituitary gland in the brain

**Effect on Men**
- Stimulates the production of sperm
The Endocrine System

Reproductive Hormones

**Follicle-Stimulating Hormones (FSH)**

- *gonadotropin* “Gonad-seeking”
- Released by the pituitary gland in the brain

**Effect on Women**

- Stimulates the development of an *follikle* (an immature egg)
- Stimulates the production of estrogen
The Endocrine System

Reproductive Hormones

**Luteinizing Hormone (LH)**

- *gonadotropin* “Gonad-seeking”
- Released by the pituitary gland in the brain

**Effect on Men**

- Stimulates the production of testosterone
The Endocrine System

Reproductive Hormones

**Luteinizing Hormone (LH)**
- “Gonad-seeking”
- Released by the pituitary gland in the brain

**Effect on Women**
- Triggers ovulation
The Endocrine System

Reproductive Hormones

**Negative Feedback Loop (Men)**

- **Inhibin** – produced by the testicles, inhibits the production of FSH
- The release of testosterone inhibits the release of FSH
The Endocrine System

Reproductive Hormones

**Negative Feedback Loop (Women)**

- **Inhibin** – produced by the ovaries, inhibits the production of FSH
- The release of estrogen inhibits the release of FSH
The Endocrine System

Reproductive Hormones

Recap

• Hypothalamus $\rightarrow$ GnRH

• GnRH $\rightarrow$ FSH + LH (from pituitary)

• FSH $\rightarrow$ Production of sperm, development of follicle, release of estrogen

• LH $\rightarrow$ Production of testosterone, triggers ovulation

• Sertoli cells $\rightarrow$ Inhibin

• Inhibin, Estrogen, Testosterone $\rightarrow$ Regulation of FSH and GnRH
The Menstrual Cycle

How Do We Feel About This Subject?

1 = strongly agree
2 = agree
3 = neutral
4 = disagree
5 = strongly disagree

1. I believe that menstruation is normal and healthy.

2. I think that menstruation is a good thing.

3. I think that menstruation is irritating.

**Women**

• Would you feel comfortable asking your partner to buy you some tampons or sanitary napkins from the store?

**Men**

• Would you feel comfortable buying tampons or sanitary napkins for your partner if she asked you too?

**Women**

• What was the experience of your menarche (your first menstruation)?

**Men**

• Would you be comfortable teaching your daughter about menstruation?
The Menstrual Cycle

Some Historical Perspectives

The Bible

“When a woman has a discharge of blood which is her regular discharge from her body, she shall be in her impurity for seven days, and whoever touches her shall be unclean until the evening. And everything upon which she lies during her impurity shall be unclean; everything also upon which she sits shall be unclean. And whoever touches her bed shall wash his clothes, and bathe himself in water, and be unclean until the evening....And if any man lies with her, and her impurity is on him, he shall be unclean seven days; and every bed on which he lies shall be unclean.”

(Leviticus 15: 19-21, 24, Revised Standard Version)

Roman Historian (Pliny, 77 A.D.)

“Contact with it turns new wine sour, crops touched by it become barren, grafts die, seeds in gardens are dried up, the fruit of trees falls off....the edge of steel and the gleam of ivory are dulled, hives of bees die, even bronze and iron are at once seized by rust, and a horrible smell fills the air, to taste it drives dogs mad and infects their bites with an incurable poison.”
Menstrual Taboos/Celebration

**Taboo**

- A forbidden and excluded persons, acts, words, thoughts, and things that supposedly threaten a group’s welfare

**Sambia (South Pacific)**

- Coming in contact with menstrual blood endangers a man’s health

**Lele (Congo)**

- If a menstruating women enters the forest it will ruin the hunting for the men

**New Guinea, Kolish Indians of Alaska**

- Lock women in a hut during their first menstruation

**Japan**

- Japanese culture honors a woman during her menarche (her first menstruation)

“Growing up, I was not told much about sex by my parents. As a result, I felt uncomfortable about beginning menstruation. My best friend’s mom, on the other hand, who was from Japan, told her about menstruation early and openly. When she began menstruation, she felt comfortable telling her mom, and according to the custom of her native country, a celebration dinner was planned to celebrate her entrance into womanhood.”
The Menstrual Cycle

How Do We Feel About This Subject?

Class Discussion

p. 72 – Menstrual suppression: A Cure or More Negativity?
The Menstrual Cycle

It’s All About The Egg

**The Big Picture**

• During a 28-day cycle (some are longer, some are shorter) females undergo a series of hormonal changes for the purpose of maturing, releasing, and potentially nourishing an ovum (egg)

**Four Phases**

• Preovulatory
• Ovulation
• Postovulatory
• Menstruation

**Some Facts**

• An ovum (egg) is surrounded by a protective capsule of cells called: The Follicle

• At birth, each ovary has about 300,000 to 400,000 primordial (immature) follicles

• At puberty aprox. 200,000 ova remain

• Each month 1000 follicles begin the maturation process but only 1 egg will be released

• Women will experience aprox. 400 menstrual cycles in her lifetime
The Menstrual Cycle
Preovulatory Phase (Days 5 – 13)

**What Happens**

- The pituitary gland secretes high levels of FSH
- FSH stimulates the development of a follicle (an immature egg)
- The maturing egg secretes high levels of estrogen
- Estrogen
  - Builds up the endometrium
  - Triggers the LH surge

**The Hormones Involved**

- FSH
- Estrogen
The Menstrual Cycle

**The Endometrium**

- The inner wall of the uterus
- A fertilized egg implants in the endometrium
- To provide nourishment for a fertilized egg, the endometrium thickens and becomes rich with blood vessels during the preovulatory phase
The Menstrual Cycle

Ovulation (Day 14)

What Happens

• The pituitary gland releases a surge of LH

• The LH surge causes the mature follicle to move to the surface of the ovary, rupture, and be expelled

• LH surge triggers changes in cervical mucus – from white and sticky to clear and slippery

The Hormones Involved

• LH, Estrogen
The Menstrual Cycle
Postovulatory Phase (Days 15 – 28)

What Happens

• Corpus Luteum: The cells from the ruptured follicle (in the ovary) begin to release large amounts of progesterone

• Progesterone assists with further thickening of the endometrium

• If a fertilized egg implants:
  • The placenta releases a hormone that sustains the corpus luteum
  • The corpus luteum then continues to release estrogen and progesterone to maintain the endometrium

• If an egg does not implant, the corpus luteum will die and there will be a sharp decline in estrogen and progesterone
The Menstrual Cycle

Postovulatory Phase (Days 15 – 28)

The Hormones Involved

• Progesterone
The Menstrual Cycle

Menstruation (Days 1 – 4)

What Happens

• Sharp declines in estrogen and progesterone

• Endometrium sloughs off

• Menstruation is the discharge of the endometrium, cervical mucus, and blood

Hormones Involved

• Sharp declines in estrogen and progesterone
Menstruation

Is it OK, safe to have sex during menstruation?

• Yes

• “My girlfriend sometimes wanted to have sex while she was menstruating. However, I was always reluctant. After taking this course I decided to give it a shot. Much to my surprise, I didn’t mind it at all. In fact, she enjoys herself more than normal.”

• “The first time my girlfriend and I had sex during menstruation I told her that she was going to have to remove the condom afterwards without me looking. The thought of it disgusted me. ..

…But as we started, we found that we enjoyed it much more because we did not have to worry about getting her pregnant, it relaxed her afterwards, and because of the added fluids, she was much more lubricated. Now we look forward to sex during menstruation.”

“I enjoy making love to my boyfriend while I’m having my periods. It might be messy, but it gives me pleasure, and most important it makes my period light the next day. Anyone who hasn’t tried making love this way is crazy. If their only excuse is that it’s messy, haven’t they ever heard of a shower?”
Menstrual Synchrony

What Is It?
• The phenomenon where women who live in close quarters (same house/dorm room) will begin to have menstruation at the same time.

Research (McClintock, 1971)
• 135 college coeds living in the same dorm over the course of a year
• At beginning of the year their cycles were an average of 8.5 days apart
• At the end of the year their cycles were an average of 4.9 days apart

What Causes It?
• Pheromones and sweat (human body odors)

Research (Stern & McClintock, 1998)
• Women exposed the underarm sweat of women in a preovulatory phase had shorter preovulatory periods
• Women exposed to the underarm sweat of women in the postovulatory phase had longer preovulatory periods
Menstrual Problems
Premenstrual Syndrome (PMS)

**What Is It?**
- Physical and/or emotional changes that women experience during the last 3 – 14 days before the start of menstruation
- 75% of women report experiencing symptoms of PMS

**What Does It Feel Like?**
- Bloating, breast tenderness, abdominal swelling, headaches, weight gain, anxiety, irritability

**What Causes It?**
- The interaction between estrogen and the brain chemical serotonin

**Treatments**
- Prozac
- Diet: reduce salts, caffeine, chocolate

**Is It Really A Syndrome?**
- In some non-Western cultures, the phenomenon of PMS is unknown/not recognized
- Symptoms of PMS have been found to be linked to attitudes towards menstruation
- In one study, men scored just as high on the PMS scale as women