

HORMONES (p.1)

1. Pituitary Hormones

from **Anterior** Lobe:

Growth hormone (GH)

Adrenocorticotrophic hormone (ACTH)

Thyroid-stimulating hormone (TSH)

Follicle-stimulating hormone (FSH)

Lutenizing hormone (LH)

Prolactin

from **Posterior** Lobe:

Vasopressin = antiuretic hormone (ADH)

Oxytocin

2. Development of Sexual Identity

a. Introduction:

“unisex”, no sexual identity

asexual reproduction

evolution of sexual identity

evolved independently multiple times in many species

introduce chance of change in genetic variation of offspring

sexual reproduction

allows for sexual dimorphism (further specializations associated with one or the other sex)

the most basic definition of “male” and “female” – the gametes

other issues:

Why only 2 sexual identities? Why not more?

Should sexual identity be permanent throughout one’s lifetime?

“dioecious”

Why have only one sexual identity in one individual?

“hermaphrodite”

Does female always need male to reproduce? “parthenogenesis”

HORMONES (cont., p.2)

2. Development of Sexual Identity (cont.)

b. Normal development in humans:

1) chromosomes

diploid # vs. haploid #

X vs. Y chromosomes, autosomes

Homogametic sex vs. heterogametic sex

Mammals females mammals males

Male birds, insects, Female birds, insects, some fish
some fish

X-bearing vs. Y-bearing sperm...determines sex of offspring

Male to female sex ratios:

“primary” sex ratio @ conception – only estimated

“secondary” sex ratio @ birth 106:100

“tertiary” sex ratio post-natal 100: 100 at 18 years
50: 100 at 87 years

2) gonads

If Y chromosome present --- H-Y antigen is activated ---
medulla of bipotential gonad is activated --- testes

If no Y chromosome present (and 2 X's are present) ---
cortex of bipotential gonad is activated --- ovary

3) hormones

testosterone (and a little estrogen) in male

estrogen (and very little testosterone) in female

Note: adrenal gland (cortex) produces these hormones too

Androgens, estrogens, & progestins

Note: Organizing (fetal CNS) vs. activational effects
(prior to and during puberty, and from then on)

“chemical castration”

organizing effects & later sexual orientation

HORMONES (cont., p.3)

2. Development of Sexual Identity (cont.)

b. Normal Development in humans (cont.)

4) internal genitalia

male Wolffian tissue --- vas Deferens, seminal vesicles

occurs if exposed to testosterone

male Mullerian tissue (Mullerian Inhibiting Substance)

female Mullertian tissue --- fallopian tubes, uterus, inner 1/3
of vaginal walls

occurs if not exposed to testosterone, no estrogen needed

female Wolffian tissue remains dormant

5) external genitalia

if exposed to testosterone vs. not exposed to testosterone

head of penis ...or clitoris

shaft of penis ...or inner labia & outer portion of vaginal walls

scrotal sacsor outer/major labia

c. How is sexual identity determined at birth?

“Assigned” sexual identity... based on appearance

“Accepted” sexual identity...may be different from assigned SI

“Gender role” – cultural definition of how a given SI is “supposed”
to behave