HORMONES (p.1)

1. **Pituitary Hormones**
   from **Anterior** Lobe:
   - Growth hormone (GH)
   - Adrenocorticotropic 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
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 Mullerian 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 sacs ……or 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