Unit II: The Biological Person

SWK 3800
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It is important to remember that biological processes and the experiences one has physically are influenced by the individual's psychosocial, spiritual and cultural beliefs.

The Nervous system

Brain and spinal cord
Spinal and cranial nerves
Control of everything

Central Nervous System (CNS)

Brain and Spinal Cord
(both divided into regions)

Peripheral Nervous System

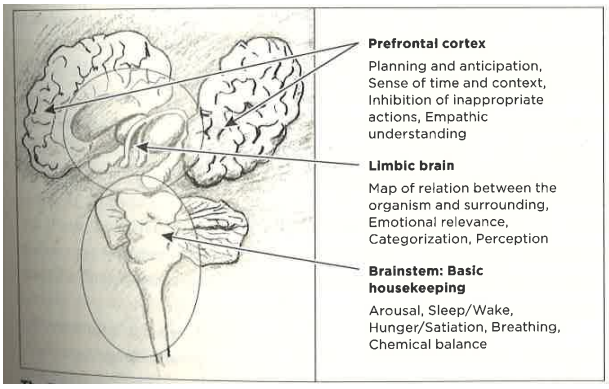
Nervous System outside of the brain and spinal cord - nerves that convey messages throughout body

Autonomic Nervous System

Controls automatic functioning systems in the body such as cardiovascular, gastrointestinal, genitourinary, respiratory, etc.

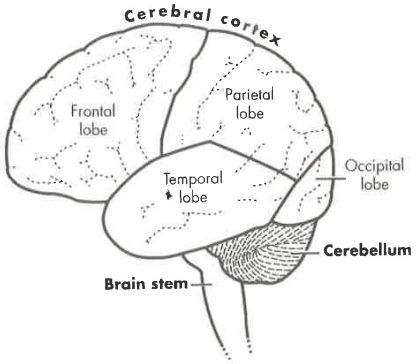
Regions of the brain

- Prefrontal Cortex
- Limbic
- Brainstem
- The brain develops from the bottom up (full maturation not until approx. age 25)



Lobes of Cerebral Cortex

- Frontal - motor/social
- Parietal - intellectual/sensory
- Occipital - visual
- Temporal - memory/emotional



Why is it important to know if someone has a brain injury (and location?)

Why be familiar with psychotropic drugs?

- impact on behaviors
- impact on physical responses
- focused on neurotransmitters
- ask about medication interactions

The Endocrine system

growth, metabolism, development, learning and memory

What is a "feedback control mechanism"?

a self-regulating hormone response system
specific hormones target specific organs

The Immune system

organs and cells that protect the body from disease and infections (specific and nonspecific immunity)

Why is it important to get immunizations?

to create specific immunity and allow the body to recognize a substance without a full blown illness

The Cardiovascular system

heart and circulatory system
regulated by autonomic nervous system

The Musculoskeletal system

support and protection of the body (allows the body to have motion through use of muscles and skeleton)

The Reproductive system

fundamental differences between males and females
(see text for diagrams on anatomy and functioning)

Sexual involvement can put an individual at risk for contracting a sexually transmitted infection and/or disease (STI, STD). In the US some of the most common STI and STD include:

1. Gonorrhea

- does not always produce symptoms
- flu like problems, rash, lower abdominal pain, pain when urinating, vaginal discharge
- can cause infertility (males and females)
- can cause blindness in infants born to infected mothers

2. Chlamydia

- does not always produce symptoms
- genital discharge, pain when urinating, abdominal pain, nausea
- increased risk of ectopic pregnancy
- can cause upper respiratory infection and pink eye in infants born to infected mothers

3. Syphilis

- can be transmitted by blood contact or sexual contact
- Tuskegee Syphilis Experiment (1932-1972)
- four stages (crater sore, body rash, latency, active organ infection)

4. Genital Herpes

- virus (can only treat, can not be cured)
- painful genital blisters
- highly contagious (even when blisters are not present)
- virus can mutate to other herpes simplex

5. AIDS (Acquired Immune Deficiency Syndrome)

- virus (can only treat, can not be cured)
- four known means of transmission
  - mother to child
  - blood to blood contact
  - sharing needles
  - sex

6. Human Papillomavirus (HPV)

- the most common std in the U.S. (linked to 93% of cervical cancer cases)
- 130 identified strains of virus
- problems occur with repeated exposure

Exposure to HPV increases risk for:

- developing precancerous cells (dyslpasia) that can become cancer
- genital warts

HPV is spread by skin to skin contact *condoms do not prevent a HPV infection*

7. Pubic Lice (commonly referred to as "crabs"):

- form of lice
- severe itching
- transmission through contact

What can be done to prevent STIs and STDs if a person chooses to be sexually involved? They should be: informed, observant, selective, honest, cautious, promptly tested and treated if potentially exposed.

Do you think sex education is important?

Sex education should:

- not replace parental involvement
- provide adequate and accurate information
- enhance responsible behavior

Recommendations for teaching sex education:

- teach about high-risk behaviors
- give facts in a straight forward manner
- values - respect, well-being of self/others
- promote parental involvement

Besides potentially contracting an infection or disease another potential outcome of sexual activity is unplanned pregnancy. If a person is sexually involved contraception needs to be considered.

No contraceptive method currently available is 100% effective 100% of the time except abstinence and sterilization. For males sterilization is 100% effective after an approximate 6 month period.

Socioeconomic status and health

economics impacts all aspects of health (access to care, decisions of treatment, education about issues.....)

Biological issues throughout the lifespan

Infertility: "the inability of a couple to achieve pregnancy after a year or more of unprotected intercourse" (Pillari, 1998).

Infertility in the U.S.

approximately 10 - 15 percent of couples
males responsible 40 - 50 percent of time

There are alternatives available to infertile couples within our culture. Even so, infertility can cause grief and depression.

Basics of Fetal development

- First trimester - primitive heart rate, recognizable facial features, limbs (mothers may experience "morning sickness")
- Second trimester - refinement of all systems, more detail (fingers and prints....)
- Third trimester - completion of systems, gain fat for cns and insulation (mothers have discomfort from weight and position)

The Birth Process: begins with changes in the mother's hormone levels (endocrine system) causing contractions and labor.

Stages of labor

- 1. contractions
- 2. birth of baby
- 3. after birth (placenta)

Depending on the birth position, medical intervention may alter the birthing process.

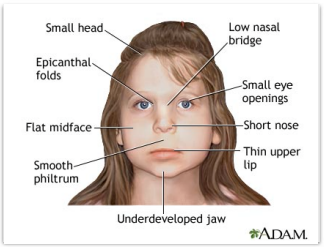
Once a newborn is delivered he or she is considered to be a "neonate". Neonates undergo several assessments after birth to screen for potential problems.

What is "normal functioning" for a neonate?

- rooting reflex
- sucking response
- grasping reflex
- walking reflex
- Moro's reflex
- Babinski's reflex

Many factors influence the health of a fetus/neonate

- Maternal diet
- Maternal stress and age
- Socioeconomic status
- Rh factor
- Genetics(hyperlipidaemia, hypercholsterolaemia, fragile X)
- Drug use (specifically alcohol and other depressants)



Fetal Alcohol Syndrome

What if someone chooses not to have the baby or the baby dies? – reactions mirror the effects of any other type of significant loss (grief).

What is normal Neonate and Infant development?

mass activity (replaced by specific activity)
sequential behaviors (progress from simple to more complex responses)

Growth for neonates and infants

head to feet
torso to extremities
rapid rate until age 3

Sleeping for neonates and infants

- full term neonates sleep 50 - 60% of time
- premature neonates sleep 80% of time
- sleep becomes deeper and for longer periods as the infant ages

Walking

key developmental milestone
average age 12 - 18 months

Preschool development (approximately ages 2 – 5) emphasizes the importance of locomotion…. 2 – 3 year olds are referred to as toddlers….

The average two year old should be able to:

- walk, run (stopping/turning not so much)
- balance on one foot
- throw objects overhead
- turn thin pages in a book
- stack 6-7 blocks steadily
- love exploring textures
- learning control of bodily functions (day)

The average three year old should be able to:

- stop abruptly and turn without falling
- ride a tricycle
- put on simple articles of clothing
- feed themselves (some spilling)
- control bodily functions (occasional night accident)

The average four year old should be able to:

- do physical stunts
- draw or trace simple figures accurately
- dress and feed themselves
- have complete control of bodily funtions
- construct complex scenarios with toys

"Middle" childhood is considered to be approximately age 6 – 12. In the U.S., they are typically involved in elementary education.

Normal physical and motor development for middle childhood

- permanent teeth
- gain approx. 5 lbs and 2 1/2" per year
- good eye hand coordination, dexterity and physical strength
- large head size (90% adult size)

A child's level of nutrition from birth through middle childhood greatly influences his/her level of development.

Is there a difference between Adolescence and Puberty?

YES!!
Adolescence is a cultural concept, puberty is a biological event

Average ages for males and females to reach puberty:

- Males - 13
- Females - 11
- (females will remain ahead of males 2 -3 years developmentally until adulthood)

What other physical changes occur during adolescence?

- growth spurt (2-3 years surrounding puberty)
- males average 4-5" gain in height
- females average 3-4" gain in height
- frontal lobe brain development

Early Adulthood is between the ages of 20 and 39 (culturally one's "physical prime.") Not a lot of biological changes occur during early adulthood - except progressive slowing down of the endocrine system resulting in changes in metabolism and memory.

Middle adulthood (age 40-65) is a stage where biological changes accompany aging and changes in social roles. Often referred to as the "sandwich generation"

Is there a double standard for aging (especially in middle adulthood) within the US culture?

Menopause

time when women cease menstruation and are no longer fertile (average age 45-55)

"climateric" male hormonal changes in mid-life

What is osteoporosis and what can be done to prevent and treat it?

- bones become fragile and brittle
- can impact any bone (hip and spine)
- prevention - calcium, exercise, not smoking
- treatment - some drug treatment to replace/slow bone loss

What is later adulthood?

65 - 74 "young old"
74 - 85 "old or aged"
85+ "old old"

What does the term senescence mean?

growing old or aging
normal process in life

Factors known to speed up the aging process:

- illness
- biological insults
- environmental factors
- poor eating habits (bad nutrition)
- lack of physical activity

When assessing someone's biological functioning always include the person's strengths and the perceptions held by the individual of their biological functioning (this can be influenced by their social, cultural, political context).