Chapter 5: Adolescence

Module 5.1
Physical and Cognitive Development in Adolescence

Brain Development and Thought:
Paving the Way for Cognitive Growth

A No Brainer?????

- Brain changes
- Growth spurts
- No clear 1:1 correspondence

Use It or Lose It

- Brain produces oversupply of gray matter during adolescence which is later pruned back at rate of one to two percent per year

The Primal Teen

"...as the teenage brain is reconfigured, it remains more exposed, more easily wounded, perhaps much more susceptible to critical and long-lasting damage than most parents and educators or even most scientists had thought."

-- (Strauch, 2003)

From Research to Practice

Immature Brain Argument: Too Young for the Death Penalty?

- After reading the information on page 268, answer the following questions:
  - Do you think that the penalty for criminal behavior should be tied to the maturity of a criminal's brain? Why or why not?
  - Are there other aspects of physical development that should be taken into consideration in determining a person's responsibility for criminal activity?
Booze It or Lose It!

- Adolescent brain development produces changes in regions involving dopamine sensitivity and production
- Adolescents may become less susceptible to effects of alcohol
- More drinks required to experience reinforcing qualities—leading to higher alcohol intake
- Alterations in dopamine sensitivity may create more sensitivity to stress, leading to further alcohol use

Yawning of the Age of Adolescence

Sleep Deprivation

- Adolescents go to bed later and get up earlier
- Sleep deprivation takes its toll
  - Lower grades
  - More depressed
  - Greater difficulty controlling their moods
  - Greater risk for auto accidents

THREATS TO ADOLESCENTS’ WELL-BEING

Why do adolescents use drugs?

- Pleasurable experience
- Escape
- Peer pressure
- Biological and psychological addiction

Alcohol: Use and Abuse

- Incidence
- Binge drinking

Why do adolescents start to drink?

- Way of proving themselves
- Release of inhibitions and tension and reduction of stress
- False consensus effect
From Activity to Addiction

Adolescent alcoholics
- Alcohol use becomes uncontrollable habit
- Increasing ability to tolerate alcohol
- Increasing need to drink ever-larger amounts of liquor to bring about positive effects craved

The Informed Consumer of Development

Hooked on Drugs or Alcohol?

Signals
- Identification with the drug culture
- Signs of physical deterioration
- Dramatic changes in school performance
- Changes in behavior

(Adapted from Franck & Brownstone, 1991, p. 593–594)

Tobacco: The Dangers of Smoking

- Incidence
- Differences:
  - Gender
  - International
  - Racial

Why do adolescents begin to smoke and maintain the habit?

- Advertisements in the media
- Addiction
- Parent and peer models
- Adolescent rite of passage

Developmental Diversity

Pushing Smoking to the Less Advantage

- Tobacco companies carve out new markets by turning to least advantaged
- Tobacco companies aggressively recruit adolescent smokers abroad
Other Sexually Transmitted Infections

- Human papilloma virus (HPV)
- Trichomoniasis
- Genital herpes
- Gonorrhea and syphilis

The most common STI is human papilloma virus (HPV). HPV can be transmitted through genital contact without intercourse. Most infections do not have symptoms, but HPV can produce genital warts and in some cases lead to cervical cancer. A vaccine that protects against some kinds of HPV is now available.

The U.S. Centers for Disease Control and Prevention recommends it be routinely administered to girls 11 to 12 years of age—a recommendation that has provoked considerable political reaction (Friedman et al., 2006; Kahn, 2007).

Another common STI is trichomoniasis, an infection in the vagina or penis, which is caused by a parasite. Initially without symptoms, it can eventually cause a painful discharge.

Chlamydia, a bacterial infection, initially has few symptoms, but later it causes burning urination and a discharge from the penis or vagina. It can lead to pelvic inflammation and even to sterility. Chlamydial infections can be treated successfully with antibiotics (Nockels & Oakshott, 1999; Favers et al., 2003).

Genital herpes is a virus not unlike the cold sores that sometimes appear around the mouth. The first symptoms of herpes are often small blisters or sores around the genitals, which may break open and become quite painful. Although the sores may heal after a few weeks, the infection often recurs after an interval, and the cycle repeats itself. When the sores reappear, the infection, for which there is no cure, is contagious.

Gonorrhea and syphilis are the STIs that have been recognized for the longest time; cases were recorded by ancient historians. Until the advent of antibiotics, both infections were deadly. However, today both can be treated quite effectively.

How Many?

<table>
<thead>
<tr>
<th>STI</th>
<th>Incidence in Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPV</td>
<td>4,500</td>
</tr>
<tr>
<td>Trichomonias</td>
<td>1,090,000</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>1,500,000</td>
</tr>
<tr>
<td>Genital Herpes</td>
<td>662,000</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>431,000</td>
</tr>
<tr>
<td>Syphilis</td>
<td>8,200</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>7,300</td>
</tr>
<tr>
<td>Total</td>
<td>5,101,000</td>
</tr>
</tbody>
</table>

(Source: CDC/BCG, 2006; NACCHO, 2006; CDC, 2007; CDC/WHO, 2008)