THE ADOLESCENT BRAIN WORK IN PROGRESS
BRAIN FACTS

- Brain weighs approximately 3 pounds
- Brain has approximately 100 billion neurons and 1 trillion supporting cells
- Neurons grow and organize themselves into efficient systems that operate a lifetime
- Brain controls all activities
- Emotion and cognition are intertwined
- Neurons can re-route circuits
- Brain and environment involved in delicate duet
- Brain never stops adapting and changing
CAVEATS

- New discoveries — research is still in its infancy

- Do **NOT** over-interpret or interpret too simplistically

- Research is **not** to the point that it can inform causal models

- Behavior is the result of complex interactions among individual, environment, genetics, situation, cultural expectations, and numerous other factors
Brain is not fully developed until **mid twenties**

- The brain develops from back to front.
- Emotional area of the brain.
Adolescent Brain

- Most adolescents should have a sign on their heads: Caution: MIND UNDER CONSTRUCTION
Critical Phases: In utero, 0-3, 10-15
These 3 critical phases are quickly followed by a process in which the brain prunes and organizes its neural pathways
LEARNING is a process of creating and strengthening frequently used synapses (brain discards unused synapses)
Brain keeps only the most efficient and “strong” synapses
Children/teens need to understand that they decide which synapses flourish and which are pruned away (Geidd, 1999)
PRUNING

“USE IT OR LOSE IT” – Reading, sports, music, video games, x-box, hanging out—whatever a child/teen is doing—these are the neural synapses that will be retained

How children/teens spend their time is CRUCIAL to brain development since their activities guide the structure of the brain (Geidd, 1999)
TEENS AND ALCOHOL

- Teen drinking can program the brain for alcoholism
- 67% of teens who drink before 15 will try other illicit drugs
- 40% of kids who begin drinking before the age of 15 will become alcohol-dependent
The “holes” indicate areas of reduced brain activity.

Drinking alcohol during times of peak plasticity can seriously damage brain wiring!
Myelin is a layer of insulation that progressively insulates these supportive cells and is whitish in color.

Myelin makes white matter more efficient—just like insulation on electric wires—contributes to overall cognitive functioning (100x faster).

Myelin affects the speed and quality of brain activity (Paus, et al., 1999).
Adolescent and Sleep

- Need more sleep (9-10 hours)
- Most get 6-7 hours
- Biological clock, circadian rhythms, is set differently than adults.
- Take longer to shut down for sleep

Brain implication:
- Brain cells replenish during sleep
- Connections are strengthened Myelin coating white matter
- Effect on learning and memory
Who Influences Teens

Greatest Influences – Parents

My child
Friends
Teacher
Media
Parents (me)
Who Influences Teens

Greatest Influences – Teens

me
Parents
family
friends
teachers, advisors, activities, clubs
What factors have the most influence on children

Protective Factor: Family Attachment (Bonding)

Most important factor for teens to feel validated was for their **PARENTS TO HUG** them.

- Listening and talking was the second key to the psychological, physical, and spiritual growth of the child.

- Parents need to show the child love no matter what the child has done.
Family Protective Factor Sharp Survey

![Bar chart showing Family Attachment from 2013 to 2019. The x-axis represents Family Attachment values from 71 to 76.5, and the y-axis represents years from 2013 to 2019. The values for each year are as follows:

- 2013: 71.5
- 2015: 74
- 2017: 75.5
- 2019: 76.5]
Bonding Strategy

Make Time For 9:

- 9 meaningful touches
  - Fist bump, high five, hug, etc.

- 9 minutes that matter
  - 3 minutes after waking up
  - 3 minutes after coming home for the day
  - Last 3 minutes before going to bed

- 9 minutes of face-to-face talk time

Dr. David Schramm, ctf4kids.org
Teens in BRHD

• Most teens in our area are making good healthy choices.

• Most of these pre-teens and teens have clear goals and ways to attain these goals.

• Parents have been and continue to be the greatest influence in their decisions to make, set, and obtain these goals.
Set Boundaries

Parents need to set clear rules and expectations.

Boundaries are the rules and expectations that define what parents expect their children to do or not to do. Unclear rules and expectations leave kids vulnerable.
Set Boundaries

• Set rules early
• Be clear and consistent
• Remind kids regularly
• Parental disapproval is the number one reason teens don’t drink
Brain Development, Rules and Connection

- Parental connection is highly important when setting rules for an adolescent.
- Rules from 0-8—come from adult, because I said so.
- Rules form 8-12—Concrete and apply to everyone, backseat drivers.
- Teens—Question rules, why is this even a rule?
Alcohol Use in Relation to Perceived Parental Acceptability

Even a Small Amount of Perceived Parental Acceptability Can Lead to Alcohol Use
## Substance Use and Perceived Parental Acceptability

**Table 12. Substance Use in Relation to Perceived Parental Acceptability (State 2017)**

<table>
<thead>
<tr>
<th>How wrong do your parents feel it would be for YOU to:</th>
<th>Student has used:</th>
</tr>
</thead>
<tbody>
<tr>
<td>drink beer, wine, or hard liquor regularly?</td>
<td>Alcohol At Least Once in Lifetime</td>
</tr>
<tr>
<td>Very Wrong</td>
<td>14.0</td>
</tr>
<tr>
<td>Wrong</td>
<td>56.8</td>
</tr>
<tr>
<td>A Little Bit Wrong</td>
<td>76.4</td>
</tr>
<tr>
<td>Not Wrong At All</td>
<td>65.7</td>
</tr>
<tr>
<td>smoke marijuana?</td>
<td>Marijuana At Least Once in Lifetime</td>
</tr>
<tr>
<td>Very Wrong</td>
<td>8.5</td>
</tr>
<tr>
<td>Wrong</td>
<td>44.7</td>
</tr>
<tr>
<td>A Little Bit Wrong</td>
<td>66.1</td>
</tr>
<tr>
<td>Not Wrong At All</td>
<td>70.4</td>
</tr>
<tr>
<td>smoke cigarettes?</td>
<td>Cigarettes At Least Once in Lifetime</td>
</tr>
<tr>
<td>Very Wrong</td>
<td>8.2</td>
</tr>
<tr>
<td>Wrong</td>
<td>32.5</td>
</tr>
<tr>
<td>A Little Bit Wrong</td>
<td>60.8</td>
</tr>
<tr>
<td>Not Wrong At All</td>
<td>45.8</td>
</tr>
<tr>
<td>use prescription drugs not prescribed to you?</td>
<td>Prescription Drugs At Least Once in Lifetime</td>
</tr>
<tr>
<td>Very Wrong</td>
<td>5.6</td>
</tr>
<tr>
<td>Wrong</td>
<td>20.9</td>
</tr>
<tr>
<td>A Little Bit Wrong</td>
<td>40.1</td>
</tr>
<tr>
<td>Not Wrong At All</td>
<td>37.6</td>
</tr>
</tbody>
</table>
Monitoring

Monitoring is knowing where your children are, who they are with and what they are doing. Because the teen brain has not fully developed impulse control, inadequate monitoring can leave kids at risk for risky behaviors.

• Meet all friends
• Drop by unannounced
• Call or text
9-12 are the prime years for parents to discuss the risky behaviors children see or hear about. BRHD knows this is the time to build Prevention Skills

On average, parents talk to their children two years too late concerning alcohol.

- Internet
- Cell Phone
- TV
- Music
- Magazines
- Books
- Movies (Kids in Mind)
- Peers Social Media
Grade 6 BRHD 30-Day Use
3 Year Trend Data

- Alcohol
- Cigarettes
- Marijuana
- e-cig
- Rx
- Inhalants
Grade 8 BRHD 30-Day Use
3 Year Trend Data

- Alcohol
- Cigarettes
- Marijuana
- e-cig
- Rx
- Inhalants
Grade 10 BRHD 30-Day Use
3 Year Trend Data

Alcohol
Cigarettes
Marijuana
e-cig
Rx
Inhalants
Grade 12 BRHD 30-Day Use 3 Year Trend Data

- High treatment needs
- Felt sad or hopeless for two weeks or more in a row during the past year
- During the past 12 months, did you ever seriously consider attempting suicide
- During the past 12 months, did you make a plan about how you would attempt suicide

2015
2017
2019
State
Who do Teens Talk to When Feeling Very Sad or Hopeless?

- Parent: 25%
- Friend/Peer: 23%
- Therapist: 8%
- School Counselor: 6%
- Doctor: 4%
- Teacher: 5%
- Clergy: 4%
- Other Adult: 5%
- Other: 5%
- I felt this way but did not talk to anyone: 20%
Eat Dinner Together.

Research indicates families who eat dinner together 4-5 times a week, have teens 33% less likely to use alcohol!
Hang in There

• Every child is worth the effort to assist them to be a happy well rounded adult and citizen.

• A wise person once expressed this thought. “Every parent must remember their grandchildren are their reward for not killing their kids.”
Bear River Health Department Link

http://www.brhd.org/