

# Know Your Neuro

## Brain-based Prevention & Treatment Tools

by Crystal Collier, PhD, LPC-S

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AGES ← 5 → 20 Prefrontal Cortex

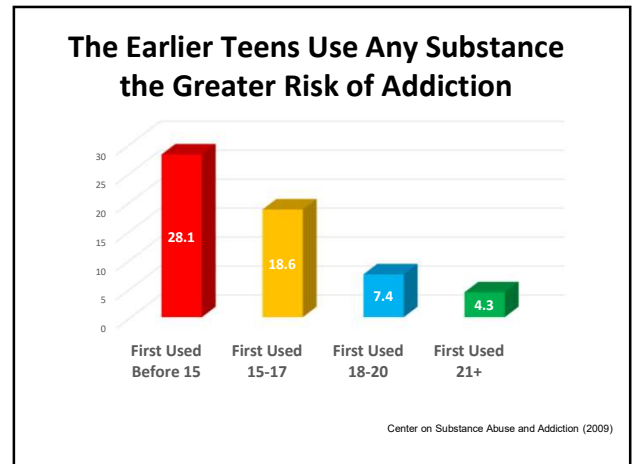
Blue represents maturing of brain areas.

2

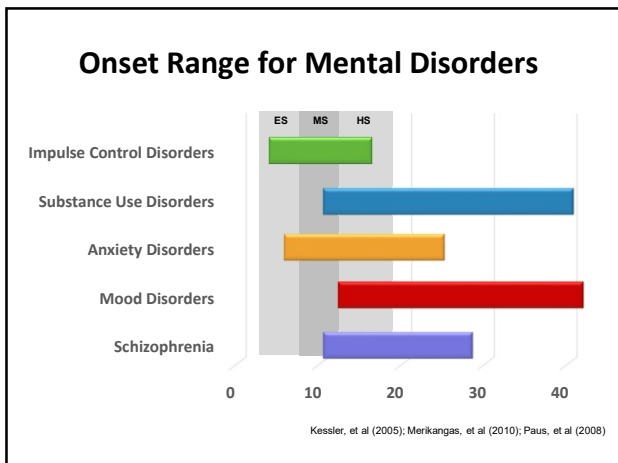
### Is it *really* so harmful?

**90% of adults diagnosed began engaging or experiencing symptoms when they were teens**

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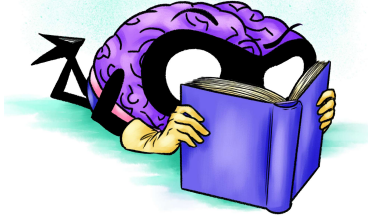


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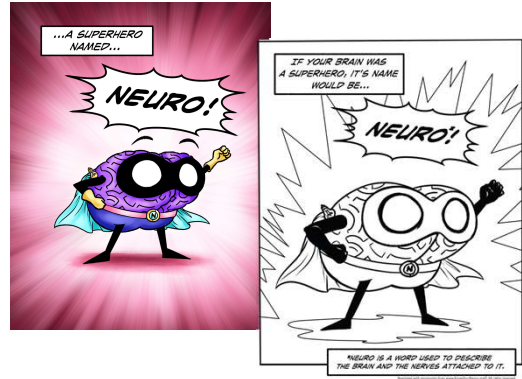
### Tool #1 Teaching Brain Development

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### Know Your Neuro: Adventures of a Growing Brain



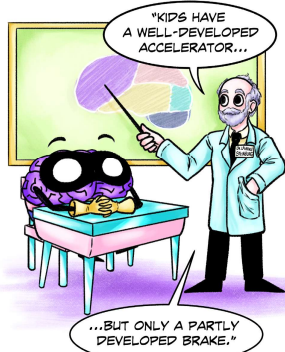
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An adolescent has a well-developed **accelerator** but only a partly development **brake**.

-Laurence Steinberg



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### What part of your brain is the **accelerator**?



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### What part of your brain is the **brake**?

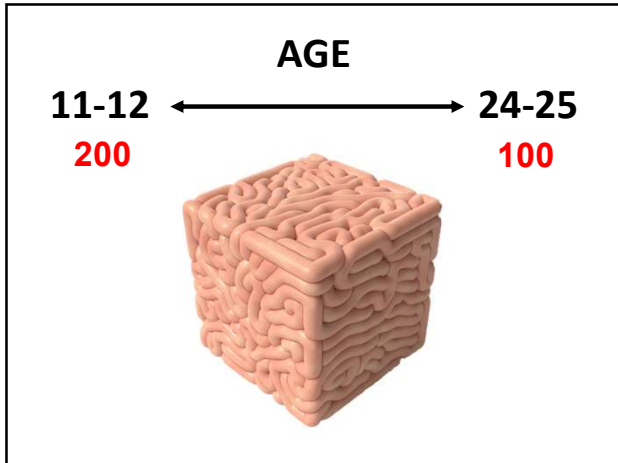


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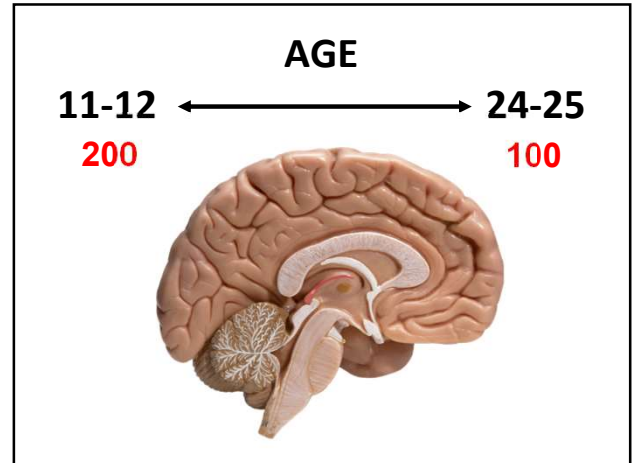
AGE  
11-12 ← → 24-25  
200



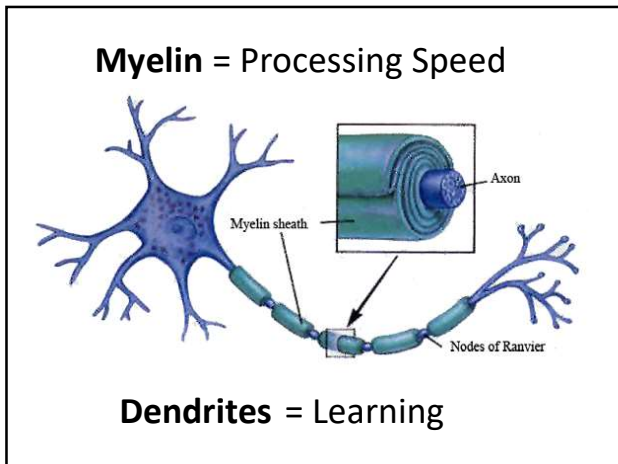
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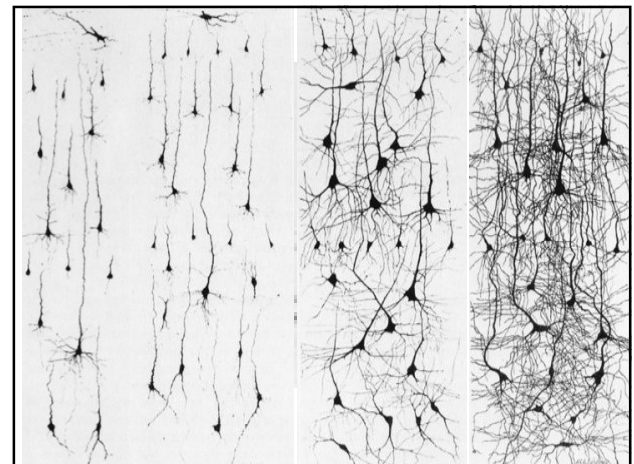
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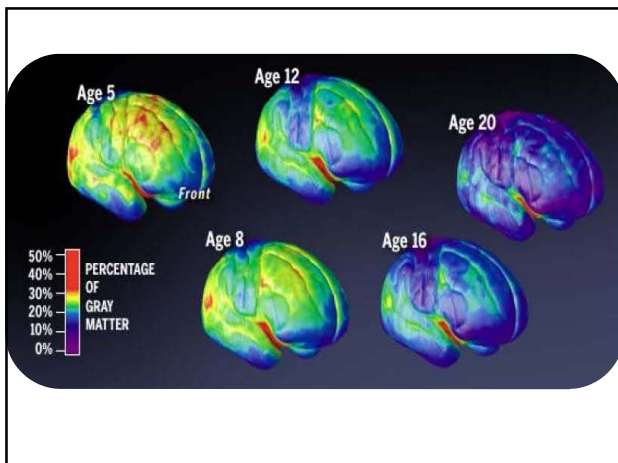
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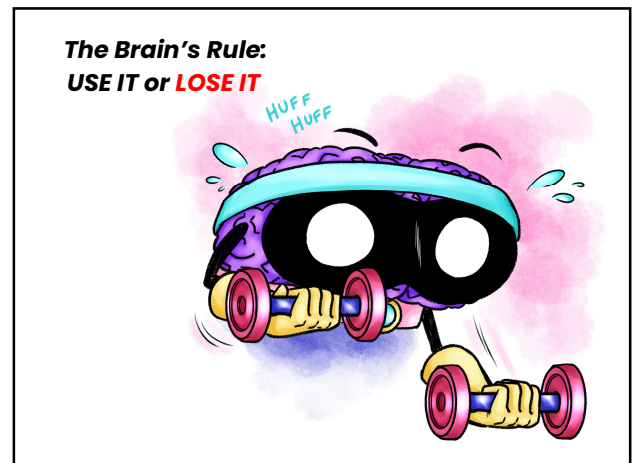
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## Executive Functioning Skills

<p><b>Birth to Age 11/12</b></p> <ul style="list-style-type: none"> <li>• Task Initiation</li> <li>• Flexible Thinking</li> <li>• Planning and Prioritizing</li> <li>• Organization</li> <li>• Working Memory</li> <li>• Self-Monitoring</li> <li>• Selective Attention</li> <li>• Coordination</li> </ul>	<p><b>Age 11/12 to 24/25</b></p> <ul style="list-style-type: none"> <li>• Abstract; conceptual understanding</li> <li>• Impulse Control</li> <li>• Problem-Solving</li> <li>• Decision-Making</li> <li>• Judgment</li> <li>• Emotion Regulation</li> <li>• Frustration Tolerance</li> <li>• Ability to Feel Empathy</li> </ul>
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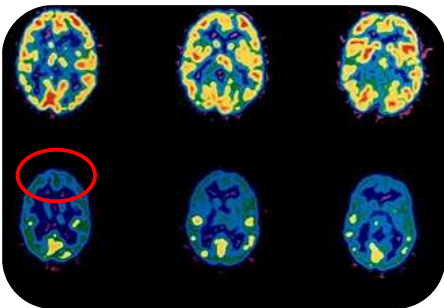
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## Tool #2 Teaching Brain Effects



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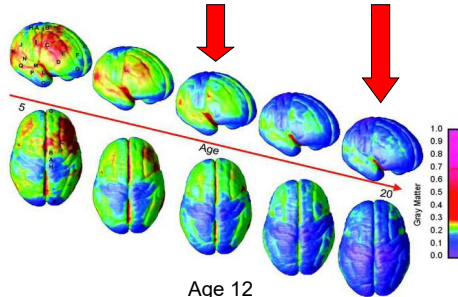
**HYPOFRONTALITY = PLEASURE OR FEAR**



**BEFORE AGE 25 = ARREST DEVELOPMENT**

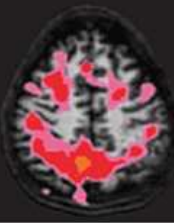

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**If you arrest here but stop using here**



Copyright © 2004 The National Academy of Sciences, USA  
 Giedd, N., Dicks, J.N., et al. (2004)  
 Dynamic mapping of human cortical development during childhood through early adulthood  
 Proceedings of the National Academy of Sciences, 101 (21), 8174 – 8179

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<p><b>15-year-old male non-drinker</b></p> 	<p><b>15-year-old male heavy-drinker</b></p> 
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**Brain activity while performing a memory task.  
Heavy drinker is sober during this test.**

Image from Susan Tapert, PhD, University of California, San Diego

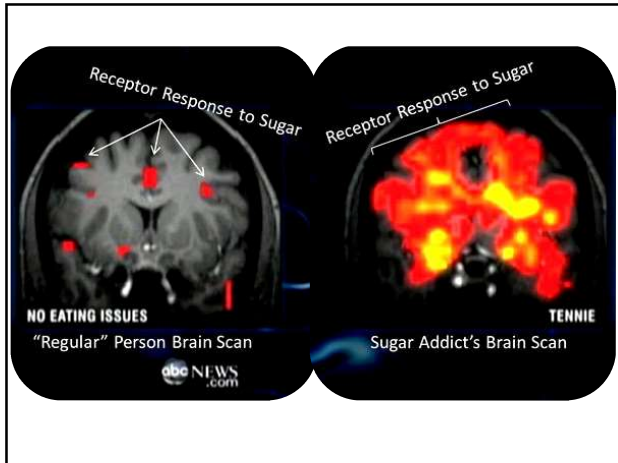
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## Marijuana Use

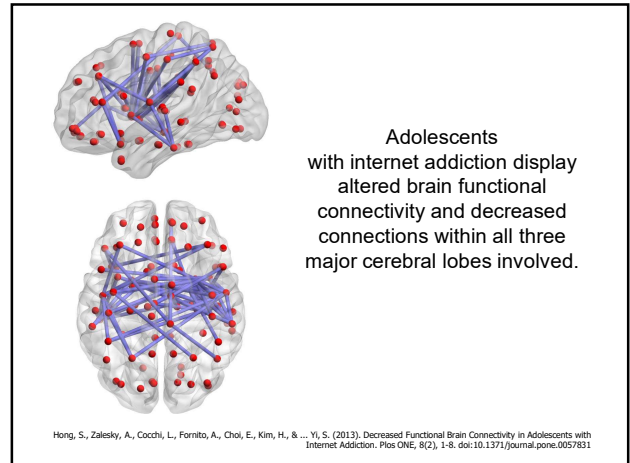
 <p>Normal</p>	 <p>16 y/o — 2 year history of daily abuse.</p>	 <p>18 y/o – 3 year history of 4 x week use.</p>
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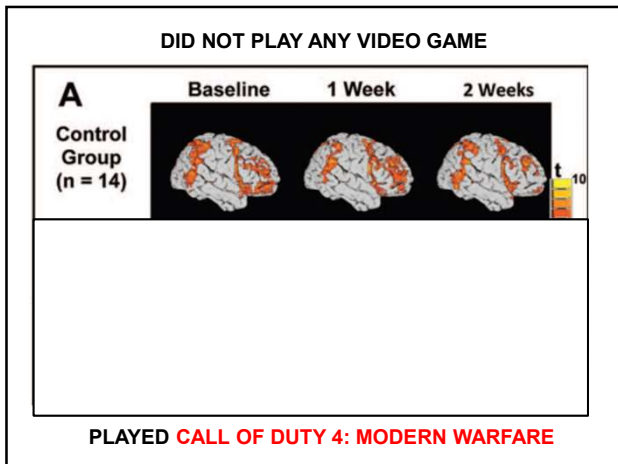




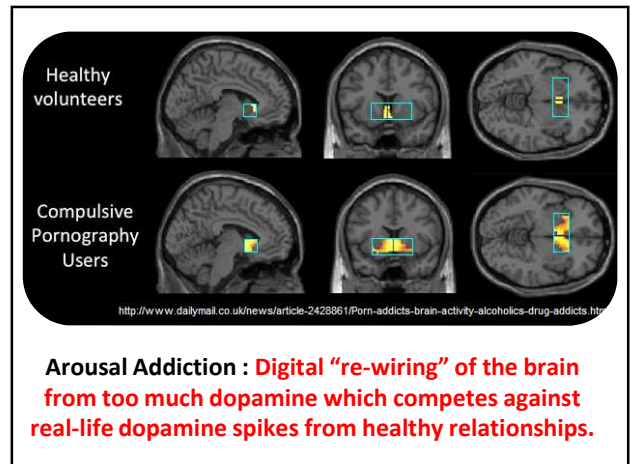
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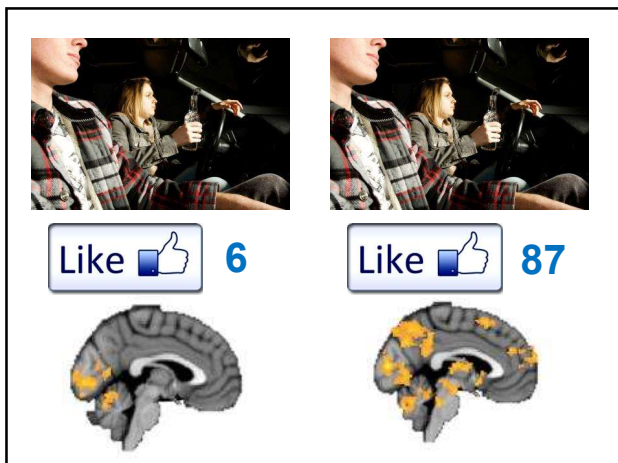
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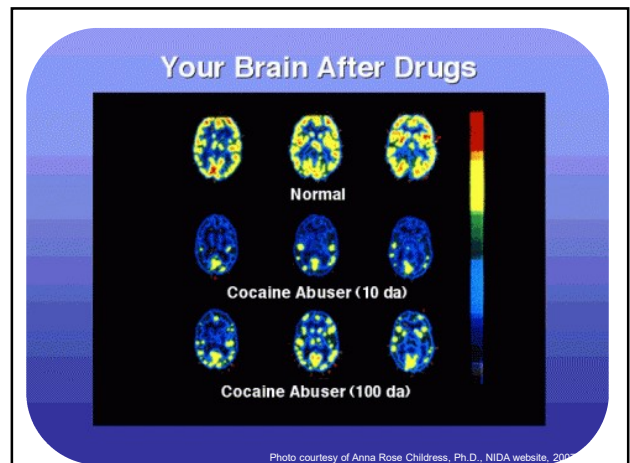
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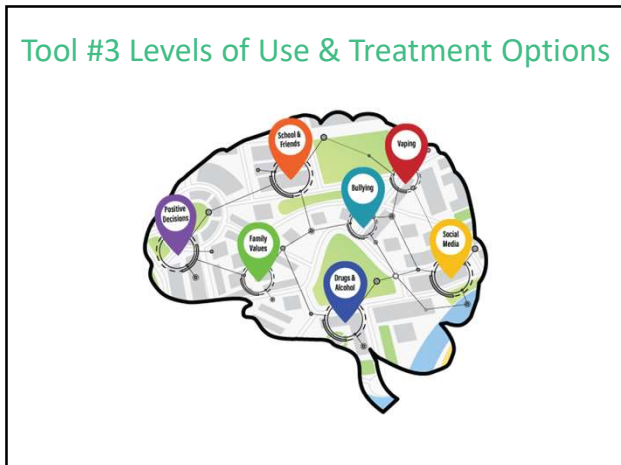
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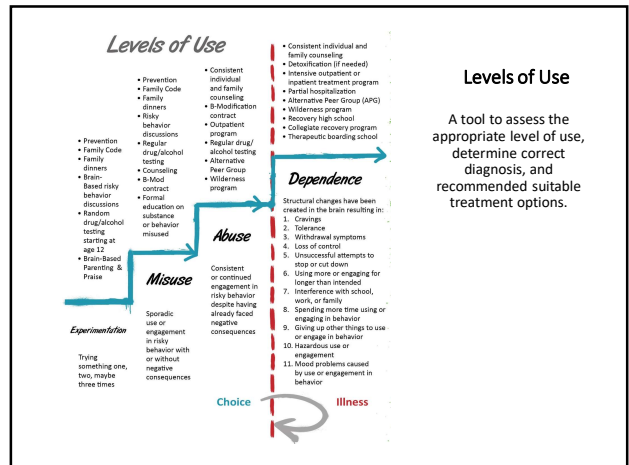
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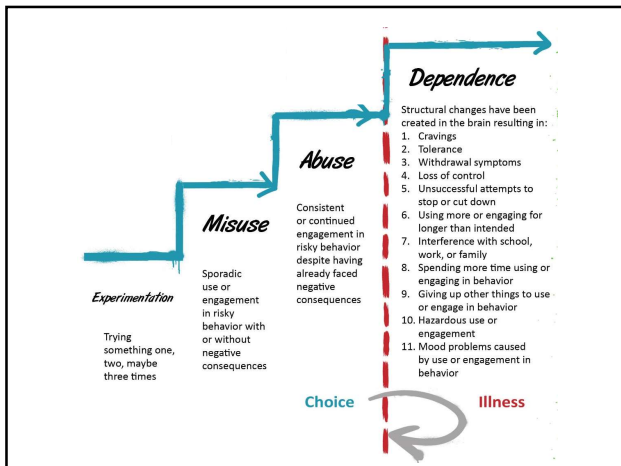
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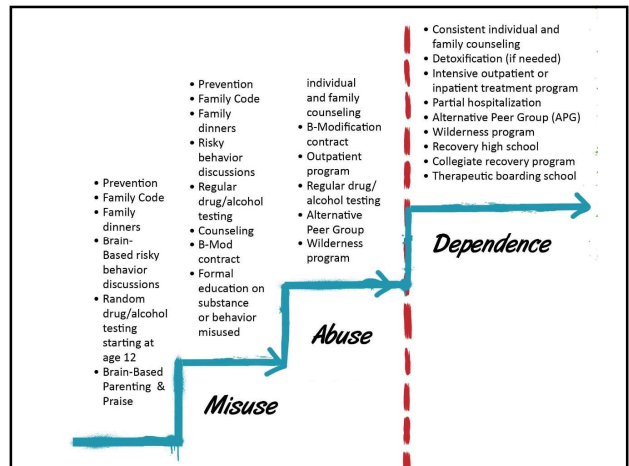
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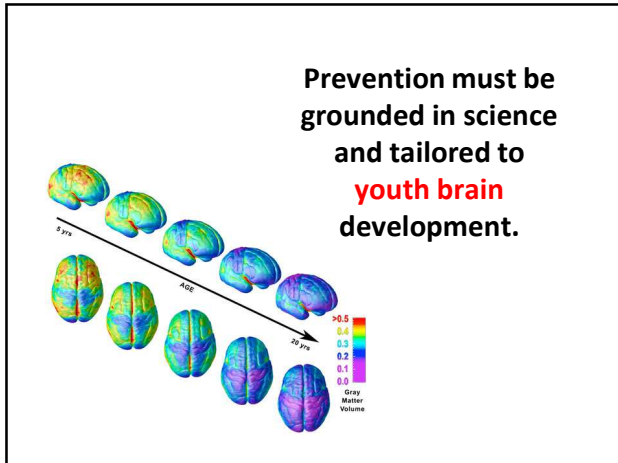
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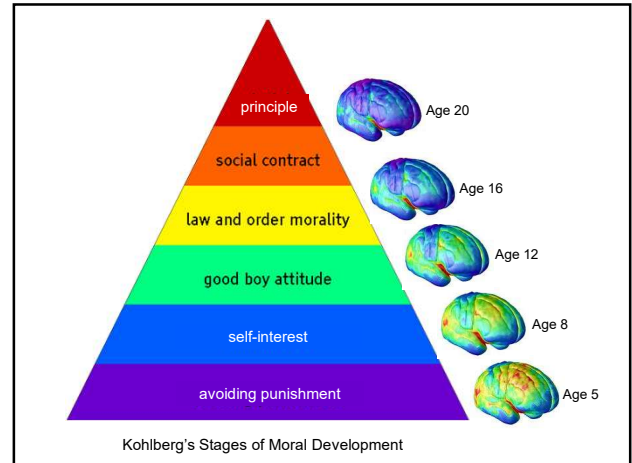
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- ✓ Genetic Testing
  - ✓ Prosocial Activity
  - ✓ Regular Family Dinners
  - ✓ Create Family Code of Ethics
  - ✓ Give Consistent Consequences
  - ✓ Pro-active Community Action
  - ✓ Treat Problems Immediately
  - ✓ Consistent Education in Schools & Home
- Prevention

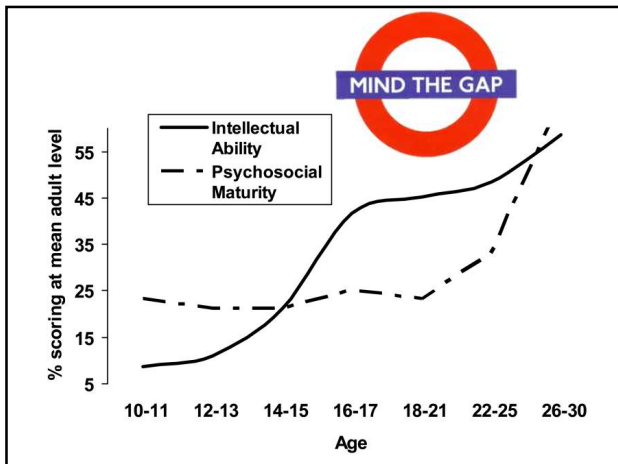
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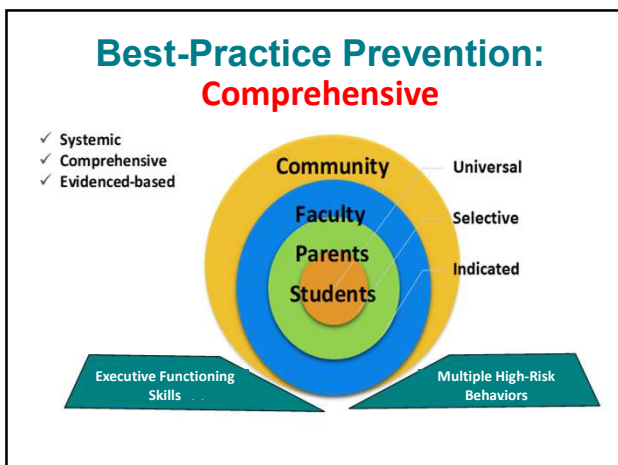
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- KEY ELEMENTS OF EFFECTIVE PROGRAMMING**
- ✓ interactive programming activities
    - ✓ emphasis on norm changing
  - ✓ universal or system-wide change programs
    - ✓ adequate delivery lengths
    - ✓ teacher training and support
      - ✓ skills training
  - ✓ active involvement of family and community
    - ✓ relationship building elements
    - ✓ cultural relevancy

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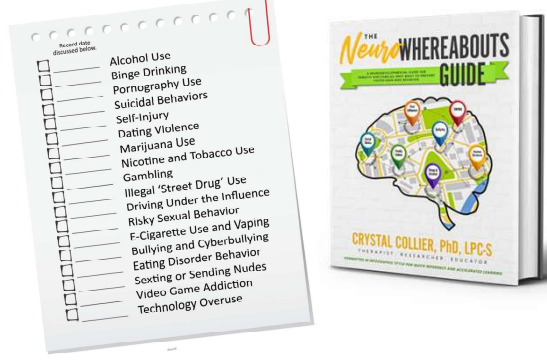


**Know Your Neuro**

[www.knowyourneuro.org](http://www.knowyourneuro.org)

Free, Online Prevention Resource

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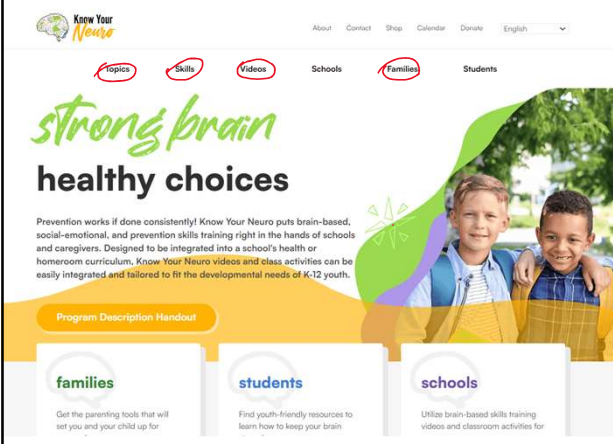
Resources discussed below:

- Alcohol Use
- Binge Drinking
- Pornography Use
- Suicidal Behaviors
- Self-Injury
- Dating Violence
- Marijuana Use
- Nicotine and Tobacco Use
- Gambling
- Illegal 'Street Drug' Use
- Driving Under the Influence
- Risky Sexual Behavior
- E-Cigarette Use and Vaping
- Bullying and Cyberbullying
- Eating Disorder Behavior
- Sexting or Sending Nudes
- Video Game Addiction
- Technology Overuse

**THE NeuroWHEREABOUTS GUIDE**

CRYSTAL COLLIER, PhD, LPC-S  
THERAPIST, RESEARCHER, EDUCATOR

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Know Your Neuro

About Contact Shop Calendar Donate English

Topics Skills Videos Schools Families Students

**strong brain healthy choices**


Prevention works if done consistently! Know Your Neuro puts brain-based, social-emotional, and prevention skills training right in the hands of schools and caregivers. Designed to be integrated into a school's health or homeroom curriculum, Know Your Neuro videos and class activities can be easily integrated and tailored to fit the developmental needs of K-12 youth.

Program Description Handout

families students schools

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**Tool #5: Parenting Tools**



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**Parenting Tools**


- High-Risk Behavior Checklist
- Executive Function Scripts
- Emotional Literacy
- B-Mod Contract
- Family Code
- Calendar of Conversation Starters
- Alcohol Poisoning Card
- Activity Pyramid
- High-Risk Behavior Talks
- Driving Contract
- Smartphone Contract
- WhereAbouts Log



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**Executive Function Building Scripts**

*Scripts for Building Abstract Thought*



What could the short-term and long-term consequences of alcohol and drug use be?

Why do you think people can't stop or alcohol in change how they feel? Do you think it is because they cannot stop voluntarily?

What is something bad happening?

We understand your perspective regarding the positive aspects of marijuana. What is your perspective on? How would you be affected if you used it?

What are some possible consequences? What are the pros and cons to your answer?

Tell me more, I may not agree with you, but I want to understand your perspective.

Could violent video games affect a player's behavior in real life? How so? Not you? Tell me more.

The values in our Family Code bring us together in unity. Why do you think unity prevents high-risk behavior? How does unity affect you?

What could restricting food, as there is no soda, or cutting, as there is no "heavy" symbolism, cause and prevent? Tell me more!

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<https://www.kimochis.com/>

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## DysFunctional Family Rules

- DontTalk
- DontTrust
- DontFeel
- DontDeal

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### BEHAVIOR MODIFICATION

**B-Mod Guidelines**

1. **KEEP IT SIMPLE.** One page. Simple language results in less nagging, reminding, or manipulating. Use one row, if that is all that is needed, and no more than 3-4 behaviors.
2. **KEEP IT POSITIVE.** Write behavioral expectations in positive terms and enlist youth to help fill in rewards.
3. **KEEP IT CONSISTENT.** Deliver the consequences set out in the contract consistently. Giving rewards back too soon, or failing to institute consequences, results in longer extinction bursts.

**BEHAVIOR MODIFICATION (B-MOD)** — A technique that uses rewards and consequences to shape or modify behavior based on B. F. Skinner's Operant Conditioning Theory.<sup>1,2,3</sup>

**SHAPING** — A technique that involves partially rewarding behaviors that are close to the target behavior until the target behavior is achieved.<sup>1,2,3</sup>

**EXTINCTION BURST** — A temporary increase in a behavior that a B-Mod contract is meant to decrease — this is a normal and expected reaction when a consequence is earned, or a reward is lost.

Behavior	Rewards	Consequences
1.	⋮	⋮
2.	⋮	⋮
3.	⋮	⋮

Date: \_\_\_\_\_

Developing Person's Signature: \_\_\_\_\_

Parents or Guardian Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**B-Mod Contract Sample**

Behavior	Rewards (Earnings)	Consequences (Losses)
1. Be sober	<ul style="list-style-type: none"> <li>• Cell phone use</li> <li>• Beer privileges</li> <li>• Privacy (such as having a door)</li> </ul>	<ul style="list-style-type: none"> <li>• Cell phone use</li> <li>• Beer privileges</li> <li>• Privacy (no door on room)</li> <li>• Emergency family pass (earned this one)</li> </ul>
2. Follow rules (includes doing chores)	<ul style="list-style-type: none"> <li>• Allowance</li> <li>• Cell phone use</li> <li>• Technology privileges</li> </ul>	<ul style="list-style-type: none"> <li>• Allowance</li> <li>• Cell phone use</li> <li>• Technology privileges</li> </ul>
3. Get good grades	<ul style="list-style-type: none"> <li>• Cell phone use</li> <li>• Technology privileges</li> <li>• New games or clothing</li> </ul>	<ul style="list-style-type: none"> <li>• Cell phone use</li> <li>• Technology privileges</li> <li>• New games or clothing</li> </ul>

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### Family Code Building Activity

## Our Family Code

In our family, we treat others with kindness, compassion, and respect on- and offline. We take care of our brain development and do not engage in risky behaviors. We never use drugs, and only use alcohol when we are 21 or over.

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### STAGES OF CHANGE

For youth, motivation to change may fluctuate often. Poor problem acknowledgment and low motivation to enter therapy can be obstacles. Although necessary at times, forcing youth into treatment can backfire and lead to reduced attentiveness and involvement. They may form an attitude of oppositional defiance and a negative impression of those trying to help them. This interferes with forming working alliances with counselors.<sup>10</sup> Parents can use communication techniques (shown in table below) successfully applied in change research to honor autonomy and explore young people's own intrinsic motivation.<sup>11,12</sup>

**A tool to determine the best method of counseling to fit stage of change.**

**STAGES OF CHANGE** — A series of stages, shown on the right, that people go through when they are modifying their behavior; each stage includes specific tasks that must be completed to move to the next, a process that may be linear, but often is not.<sup>13,14</sup>

**MOTIVATIONAL INTERVIEWING** — An empathic counseling style for facilitating a constructive conversation about behavior change that minimizes resistance.<sup>15</sup>

<b>Pre-Contemplation</b>	Validate their feelings and lack of readiness. Encourage self-exploration and set appropriate limits.
<b>Contemplation</b>	Validate that they are thinking about making a change. Encourage exploration of the pros and cons of change.
<b>Preparation</b>	Praise the decision to change and any steps toward change. Ask open-ended problem-solving questions.
<b>Action</b>	Support, encourage, and praise new behaviors.
<b>Maintenance</b>	Support, encourage, praise, and let go.
<b>Relapse</b>	Analyze triggers, re-assess motivation, boost coping skills, and set appropriate limits.

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Drug Testing

- #1 Refusal Skill
- Start at 11/12
- Frequency 1-2/yr.
- Increase if suspicious or using

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### Responsible Drinking Formula

**Responsible Alcohol Use =**

- No or Minimal Genetic Addiction Risk
- + Safe Environment (Safe people, safe place, designated driver)
- + Age 21 or Older (Or 25 when Frontal Lobe fully develops)
- + No More than 1 Serving/per hour
- + No More than 2-4 Servings/day (depending on body weight/height)
- + No More than 1-2 days/week

**One Serving Size = 1/2 oz. Alcohol**

10-12 oz. Beer

1.25-1.5 oz. Shot

5 oz. Wine

80-Proof Hard Liquor

A tool to teach youth the appropriate amount of alcohol and frequency of use to determine from binge drinking.

**If a 140 lb. person has...**

Serv/Hr	BAC	Mental and Physical Effects
1/1	0.01-0.03	Lightheaded; minor impairment in judgment
2/1	0.04-0.07	Buzzed; impairment in reasoning & memory, exaggerated emotions & behavior, lowered alertness, reduced coordination
3/2	0.05-0.08	Euphoric; impaired speech, vision, balance, reaction time, hearing, judgment, self-control
5/3	0.11-0.14	Drunk; depressive symptoms; severely impaired judgment, perception & motor functions

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**Know Your Neuro**

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