COMMUNITY CONVERSATIONS

THE PERILS OF ADOLESCENCE: UNDERSTANDING COMPLEX TEENAGE BEHAVIOR

October 26, 2015
Risk Taking in Adolescents: ADHD, Impulsivity, and Experimentation

James McCracken, M.D.
Director,
UCLA R-NPH Child and Adolescent Psychiatry
“Life is either a daring adventure or nothing at all.”
-- Helen Keller

“Don’t be too timid and squeamish about your actions. All life is an experiment. The more experiments you make the better.”
-- Ralph Waldo Emerson

“Taking risks gives me energy.”
-- Jay Chiat

“risk takers calculatedly take and over take risks.”
-- Ernest Agyemang Yeboah

“It’s like gambling somehow. You go out for a night of drinking and you don’t know where your going to end up the next day. It could work out good or it could be disastrous. It’s like the throw of the dice.”
-- Jim Morrison
Risk Taking in Adolescents

• Risk taking
  – Not simply maladaptive
  – Risk taking/experimentation/exploration
  – Crucial for learning, trying on adult roles, and understanding the world
  – Peaks in adolescence—high sensation seeking and reward responses, but still immature cognitive control and error learning

• Risk taking is multifaceted
  – RT = curiosity + challenge + excitement + denial

• Some are risk averse/Others seek sensation
  – Where is your child on this spectrum of low-high?

• Are there high risk groups for maladaptive risk taking? Yes!
  – Highly impulsive – ADHD, aggressive
  – Highly emotional -- Depressed, bored, angry
  – High conflict -- Feels rejected by parents, peers
  – Wrong peer group
Drug Use in Teens -- 2014

Graphs showing the percentage of teens who used any illicit drug in lifetime and in last 12 months, categorized by grade.
What Parents Often Worry About

Ecstasy <1% 8th, 2% 10th, 3.5% 12th graders

LSD <1% 8th, 1% 10th, 2% 12th

Heroin <1% 8th, <1% 10th, <1% 12th

Cocaine 1% 8th, 2% 10th, 3% 12th
What Parents Should Worry About

- 41% of teen drivers report they texted while driving in past 30 days
- Accidents leading cause of death in teens
- 10% of teens drove after drinking in past 30 days
- 22% of teens rode with drinking driver in past 30 days
- 19% of teens drank before age 13
- 35% of teens reported drinking in past 30 days
- Binge drinking extremely common in teens, 20% in girls
Binge Drinking

Use
\% who had 5+ drinks in a row at least once in past two weeks

Risk
\% seeing "great risk" in having 5+ drinks in a row once or twice each weekend

Availability
\% saying "fairly easy" or "very easy" to get
What Parents Should Worry About

47% of High Schoolers have had intercourse
12% of 7th graders have had intercourse – 60% of 12th graders
34% of High Schoolers report intercourse in past 3 months
US has highest teen pregnancy rate in the developed world
Every day, 2,000 girls 15-19 become pregnant
Every day, 1,100 births occur to 15-19 yo mothers
23% of High Schoolers report smoking marijuana in past 30 days
Rates of daily use – 1% of 8th, 3.4% of 10th, and 5.8% of 12th graders
Other Worries

- 16% of teens smoked cigarettes in past 30 days
- 15% of teens report being cyber-bullied in past 12 mos
- 20% of teens had been bullied at school
- 10% of teens were victims of sexual dating violence/10% physical dating violence in past year
- 8% attempted suicide in past year
## Risk Taking in Adolescence: Let’s Get Real
Mom and Dad

<table>
<thead>
<tr>
<th>Teen Report (%)</th>
<th>Parent Report (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever had sex</td>
<td>39</td>
</tr>
<tr>
<td>Stayed out all night</td>
<td>17</td>
</tr>
<tr>
<td>Drank alcohol</td>
<td>16</td>
</tr>
<tr>
<td>Smoked cigarettes</td>
<td>11</td>
</tr>
<tr>
<td>Used drugs</td>
<td>11</td>
</tr>
<tr>
<td>Achieved Honor Roll</td>
<td>70</td>
</tr>
</tbody>
</table>
ADHD = Risky+

• ADHD remains the most common diagnosed mental disorder in adolescents (6%)
• Impulsivity, especially during stress, is at the core of ADHD
• Higher risks in ADHD for:
  – Driving
  – Risky sex
  – Earlier experimentation with drugs—by 2 yrs or more
  – Depression, self-harm
  – Falling in with wrong peers
• Often under-treated
  – Community treatment shown to under-dose by 50%!
What Can We Do To Protect?

• Start talking early about risks!
• Preach delay
• Monitor, monitor, monitor
• Work on the denial, model “responsible worrying”, “What if?”
• Teach talking out feelings, not acting out
• Teach and model moderation, slow use or involvement
• Be aware of access to potential risks
What Can We Do To Protect?

• For some exploration, allow graduated risk
• Experimentation will happen, so help learning from mistakes
• Help combat boredom, isolation, negativity
• Get to know your teen’s peers
• Professionals and Public Health agencies need to better communicate risks
• For the highly impulsive, highly emotional, don’t delay treatment – it works
  – New data on combined medications—better!
  – New approaches to teach “executive functions”
  – Better tools to gauge treatment response and match
thinkSMART™
(SUCCESSFUL MANAGEMENT OF APPROACH TO RESPONSIBILITIES AND TASKS)

A NEW GROUP-BASED EXECUTIVE FUNCTION EDUCATIONAL TRAINING FOR YOUTH 12-15 AT UCLA

ABOUT thinkSMART™
Consists of twelve 90-minute weekly group classes. For groups with youth under the age of 18, parents must be able to attend the weekly sessions and support their child’s skill use. Participants must be willing to participate in class exercises and commit to practicing the skills at home with their parent.

*FOR MORE INFO*
Contact the program director, Alissa Ellis, PhD at (310) 825-0118 or email thinksmartprogram@gmail.com today for more details about thinkSMART! Also, visit www.semel.ucla.edu/adhdandmood/SMART

What are executive function skills?
They are brain processes that help us to plan, focus our attention, remember instructions, and multi-task. EF skills are key to success in school, jobs, and relationships.

Who should enroll?
12-22 year olds who struggle with executive function. A diagnosis is not required, but this may include youth diagnosed with ADHD, anxiety, mood, high-functioning autism, learning disabilities, and/or other neurodevelopmental disorders.

What will your child learn?
They will learn how to...
- Effectively solve problems
- Get organized
- Break down a big project
- Manage time
- Use mindfulness
- Recognize and control emotions
- Use a planner
- Make a to-do list
- Jump start a task
- Improve sleep habits
- Study!
What Can We Do To Protect?
Treatments Can Help

• Cox et al studied 35 adolescents with ADHD and blindly compared the effects of 2 stimulant preparations on driving performance
• Overall, driving scores were much improved with active treatment versus placebo
• Reduced inappropriate speeding, driving off road or across midline, and impulsive acts (Pediatrics, 2006)
• Even with active medication, the subjects showed poor awareness of unsafe driving
Marijuana and the Teenage Brain

Carrie E. Bearden, Ph.D.

Departments of Psychiatry and Biobehavioral Sciences and Psychology
Semel Institute for Neuroscience and Human Behavior
cbeardened@mednet.ucla.edu
Disclosure

Carrie E. Bearden, Ph.D.

*I have no relationships with entities producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients.*
Teenage brain “remodeling” analogous to the developmental window of increased plasticity seen in infancy.
The Adolescent Brain and Risk for Psychopathology: What Goes Wrong?

- Adolescent Neurodevelopment:
  - Gray matter changes
    - Typical Development
      - Synapses overproduced early in development

- White matter changes
  - Typical Development

- Brain plasticity: Much of the potential and many vulnerabilities of the brain may depend on the first 2 decades of life (Lenroot et al. 2006)

**age: 3-6**
- Rapid Growth in Frontal Circuits: attention, vigilance, alertness

**7-15**
- Growth Spurt in temporal/parietal lobes: languages, mathematics

**16-20**
- Tissue Loss in Frontal Circuits: self-control, planning, regulate behavior
Adolescence as a Health Paradox?

- A time of extensive increases in physical and mental capabilities, yet increased overall mortality/morbidity
- Prefrontal cortical maturation corresponds to development of higher-level cognitive processes
- Asynchrony in developmental time courses between affective/approach and cognitive control brain systems may lead to increased vulnerability for risk taking in adolescence (Willoughby T, et al. Brain Cogn. 2013)
- Maturing subcortical systems (eg, nucleus accumbens) disproportionately activated relative to top-down control systems (Galvan A, et al. J Neurosci. 2006)
TEEN-AGE MOUSE

I CAN TOTALLY GET AWAY WITH THIS!
Unusual Thinking
- Confusion about what is real and what is imaginary
- Suspiciousness or paranoid thinking
- Feeling that your ideas are being controlled by outside forces

Perceptual Disturbances
- Sensitivity to sounds
- Hearing things that other people don’t hear
- Seeing things that others don’t see

Negative Symptoms
- Wanting to spend more time alone
- Not feeling motivated to do things
In answering the question, therefore, on what the evidence rests that hemp drugs may induce mental aberration, the Commission would offer the following remarks:

... we have a number of instances where the hemp drug habit has been so established in relation to the insanity that, admitting (as we must admit) that hemp drugs as intoxicants cause more or less of cerebral stimulation, it may be accepted as reasonably proved...., that hemp drugs do cause insanity.

The acute symptoms correspond to the temporary saturation of the body with the poison, while the chronic symptoms are the expression of definite anatomical lesions in the brain gradually developed under toxic influence... Further ... prolonged abuse of the drugs may give rise in some cases to definite brain lesions resulting in a progressive weakening of all the faculties leading to dementia.

It may indeed be accepted that in the case of specially marked neurotic diathesis, even the moderate use may produce mental injury... Nervous and predisposed persons appear to be more easily affected than normal subjects.


1893-94.
- Dunedin cohort study - People who used cannabis by age 15 4x more likely to have a psychosis diagnosis at age 26 (Arensenault et al. 2013)

- 50,000 Swedish army conscripts - Cannabis use associated with increased risk of schizophrenia, consistent with a causal relationship (Zammit et al. 2002)

- Linear Association between age at starting cannabis use and age at onset of psychotic illness (Stefanis et al. 2013)

**Answer: Probably**

Daily Use, Especially of High-Potency Cannabis, Drives the Earlier Onset of Psychosis in Cannabis Users

Marta Di Forti*, Hannah Sallis, Fabio Allegrini, Antonella Trotta, Laura Ferraro, Simona A. Stilo, Arianna Marconi, Caterina La Cascia, Tiago Reis Marques, Carmine Pariante, Paola Dazzan, Valeria Mondelli, Alessandra Paparelli, Anna Kolliakou, Diana Prata, Fiona Gaughran, Anthony S. David, Craig Morgan, Daniel Stahl, Mizanur Khondoker, James H. MacCabe, and Robin M. Murray
Harwood et al 2012
Cannabis use before age 17 years and young adult outcomes

Sillins et al, Lancet Psychiatry  2014
Dose-response effects of cannabis use in adolescence

Other Illicit Drug use
Suicide attempt

Freeman et al. Lancet Psych
2014

Direction of Causality…?
Imaging the decision to smoke marijuana

Brain regions involved in reward and decision-making contributed to neural signature

Bedi et al in press
Clinical Implications

- Social connections are important
- After school activities (sports, extracurriculars, art, anything they love!)
- Regular sleep schedule; Limit caffeine intake and screen time
- Family Dinners
Family Communication and Mood or Anxiety Disturbances in Children and Adolescents:
Principles for Creating Protective Environments

David J. Miklowitz, Ph.D.
Professor of Psychiatry
UCLA Semel Institute
Director, Child and Adolescent Mood Disorders Program (CHAMP)
One day you realize that your entire life is just awful, not worth living, a horror and a black blot on the white terrain of human existence. One morning you wake up afraid you are going to live.

--Elizabeth Wurtzel, Prozac Nation (1994)
“When I feel happy, I get real bouncy… I’m hopping all over the place, and my mind seems to be focused on one thing for a short time. Sometimes, I don’t necessarily feel bouncy, just kind of light and airy, like a butterfly. I sort of flit and float from place to place, physically and in my mind.

When I feel depressed, I’m like…dead. I just sit there lifelessly, and my body just sort of flops around, like a Beanie Baby. Also, my mind just sort of drifts away and wonders aimlessly into space.”

Birmaher, 2004
Pediatric-Onset Bipolar Disorder

- 2% lifetime prevalence < 18 years
- Major depression: 9% lifetime prevalence (< 18 yrs)

- Kids with bipolar disorder are at risk for:
  - School and occupational problems
  - Substance abuse
  - Suicide
  - Social impairment
  - Comorbid disorders

- 43% of bipolar teens recover (with medications) in the year following a manic episode

- 54% have recurrences in 1 year
- 65% are noncompliant with medications
“That’s me on that string...my son is like a big baby puppeteer, keeping us all on a string with his vicious mood swings. Worst of all he seems delighted that he can do it.”
Family-Focused Treatment (FFT) of Bipolar Disorder

- 12 to 21 outpatient sessions over 4 to 9 months
- **Assessment and Engagement** of patient and family
- **Psychoeducation** about BD: symptoms, early recognition, etiology, treatment, self-management
- **Communication enhancement training** (behavioral rehearsal of speaking and listening strategies)
- **Problem-solving** skills training

Results of Eight Randomized Trials of FFT plus Medications

- Total 720 patients
  - Five trials with bipolar adults
  - Two with bipolar adolescents
  - One with youth at high familial risk for BD
- Comparisons included brief psychoeducation or equally intensive individual therapy (with medications)
- Patients in FFT had greater benefits over 1-2 years in:
  - Time to recovery
  - Time to recurrence
  - Psychosocial functioning
Can FFT stabilize kids at behavioral and familial risk for BD?  
Early intervention trial (N = 40)

<table>
<thead>
<tr>
<th>Age, M + SD</th>
<th>12.3 + 2.8 (range 9-17)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female, no. (%)</td>
<td>17 (42.5%)</td>
</tr>
<tr>
<td>Kids with bipolar parents</td>
<td>35 (88%)</td>
</tr>
<tr>
<td>Kids with bipolar siblings</td>
<td>5 (12%)</td>
</tr>
</tbody>
</table>

**Kids’ diagnoses:**

- Bipolar NOS: 20 (50%)
- Cyclothymic disorder: 3 (7.5%)
- Major Depression: 17 (42.5%)
Family Intervention Accelerates Recovery from Index Episodes in Youth at Risk for BD

P = 0.047; HR, 2.69

• Greater amygdala activation before treatment predicts greater clinical improvement in FFT.

• Greater increase in dorsolateral prefrontal cortex activity in FFT from pre- to post-treatment.
The Role of the Family in Anxiety Disorders Among Teens
Positive Family Interaction Therapy for Childhood and Adolescent OCD

- Augment standard treatment (exposure-based individual CBT) by enhancing family environment:
  - Reduce familial criticism, hostility, blame
  - Promote family problem-solving
  - Increase cohesion
  - Reduce accommodation (allowing or encouraging rituals)
  - Create common language for communicating about symptoms

T. Peris & J. Piacentini, 2015
Key Components of Positive Family Interaction Therapy

- Psychoeducation
- Self-Efficacy
- Emotion Regulation Skills Training
- Parenting Skills
- Reframing of Family Dynamics
Clinical Global Impressions Scale
Positive Family Interaction Therapy (plus standard CBT) = 70% improved
Standard Treatment (CBT only) = 40% improved

Obsessive-Compulsive Symptoms

Remission rates were 50% for PFIT compared to 20% for ST

Families receiving PFIT showed decreases in accommodation, blame, and family conflict

Peris, Piacentini, McCracken et al., in press
Take-Home Messages

• Bipolar disorder in children and adolescents are often best treated with a combination of medications and family interventions.

• Family-focused therapy (FFT) may help prevent or delay the onset or worsening of mood symptoms in kids at risk for bipolar disorder.

• Pediatric anxiety disorders can be approached using Positive Family Interaction Therapy (PFIT).
Overall Strategies for Parents

- Symptoms wax and wane, so all behavioral plans must be flexible
- Pick and choose battles carefully: set limits with awareness of symptom states
- Keep track of mood or anxiety escalations on a mood chart
- Engage adolescent in own self-monitoring
- Not everything requires a medication adjustment
UCLA Child and Adolescent Mood Disorders Program (CHAMP)
Suicide & Self-Harm Prevention: Building A Life Worth Living

Joan Asarnow, Ph.D.
UCLA Youth Stress & Mood Program
www.semel.ucla.edu/mood/youth-stress
310 794-4962

www.nrepp.samhsa.gov
### Second Leading Cause of Death for Teens & Young Adults

**Every 12.9 Minutes Someone Dies by Suicide in U.S.**

<table>
<thead>
<tr>
<th>Rank</th>
<th>10-14 years</th>
<th>15-19 years</th>
<th>20-29 years</th>
<th>30-39 years</th>
<th>40-49 years</th>
<th>50-59 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
<td>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
</tr>
<tr>
<td>2</td>
<td>Malignant Neoplasms</td>
<td><strong>Suicide</strong></td>
<td><strong>Suicide</strong></td>
<td><strong>Suicide</strong></td>
<td>Heart Disease</td>
<td>Heart Disease</td>
</tr>
<tr>
<td>3</td>
<td><strong>Suicide</strong></td>
<td>Homicide</td>
<td>Homicide</td>
<td>Malignant Neoplasms</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
</tr>
<tr>
<td>4</td>
<td>Congenital Malformations</td>
<td>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
<td>Heart Disease</td>
<td><strong>Suicide</strong></td>
<td>Liver Disease</td>
</tr>
<tr>
<td>5</td>
<td>Homicide</td>
<td>Heart Disease</td>
<td>Heart Disease</td>
<td><strong>Homicide</strong></td>
<td>Liver Disease</td>
<td>Chronic Lower Respiratory Ds</td>
</tr>
<tr>
<td>6</td>
<td>Heart Disease</td>
<td>Congenital Malformations</td>
<td>Diabetes Mellitus</td>
<td>Liver Disease</td>
<td>Diabetes Mellitus</td>
<td>Diabetes Mellitus</td>
</tr>
<tr>
<td>7</td>
<td>Chronic Lower Respiratory Ds</td>
<td>Influenza and Pneumonia</td>
<td>Congenital Malformations</td>
<td>Diabetes Mellitus</td>
<td>Cerebro-Vascular</td>
<td><strong>Suicide</strong></td>
</tr>
</tbody>
</table>

*Leading causes of death by age group, United States 2013*. Source: CDC vital statistics. Courtesy Alex Crosby
Suicide Kills More Youths Than Other Major Medical Illnesses

Most Youths Survive Suicide Attempts

~25 suicide attempts for every death by suicide in the U.S.
~157,000 youth, ages 10 to 24, receive medical care for self-inflicted injuries at Emergency Departments across the U.S.

http://www.cdc.gov/ViolencePrevention/suicide/youth_suicide.html
SELF-INFLICTED INJURIES: CUTTING/PIERCING

How Suicides Occur & How They Can be Prevented

Vulnerability

Stress/Precipitants

Acute Mood Change (Hopelessness, Depression, Panic, Rage)
How Suicides & Suicide Attempts Occur

- **Lethal Means**
  - Knowledge
  - Bad Luck
  - Death

- **No Lethal Means**
  - Knowledge
  - Good Luck
  - Suicide Attempt

- **No Means People Present**
  - Attempt Prevented
Treatment Can Help: Adults
Survival Analysis for Time to First Suicide Attempt: DBT Group Had Half the Rate of Suicide Attempts (23%) vs. CTBE Group (46%), NNT = 4.24

Hazard Ratio, 2.66, \( P = .005 \).
Community Treatment by Experts (CTBE) indicates community treatment by experts
Treatment Can Help: Kids Suicide Attempt Outcomes


UCLA SAFETY PYRAMID

Stress Reactions

Thoughts

Activities/Actions

People

Settings

1. Individual Treatment
2. Family Treatment
3. Phone Coaching
4. Integrated/Coordinated Treatment Team
5. Multi-Family Group Treatment

www.nrepp.samhsa.gov
Other Points to Remember

• The child and all of us are doing the best we can and need to keep working to improve
• Build on strengths- work to build a life the child wants to live
• Skills help and you have to use them
• Take care of caregivers - Care for the family
• It takes a village- primary care, school, friends, coaches, community
• Risk persists, continuing protective processes are needed
Risk Indicators:
- Previous suicide attempts/suicidal behavior
- Depression, mental illness
- Alcohol or drug abuse
- Change in mood or behavior
- Sleep problems
- Talk of death, suicide, burden to others
- Giving away possessions, Good by messages
- Online searches on suicide
- Exposure to suicide/suicidal behavior of others
- Stressful life event/shame/humiliation/unsolvable problem

Restrict Access to Dangerous Methods

Protective Monitoring

If you or someone you know is having thoughts of suicide, contact the National Suicide Prevention Lifeline at 1-800-273-TALK (1-800-273-8255),
http://www.suicidepreventionlifeline.org/

UCLA Youth Stress & Mood Program
http://www.semel.ucla.edu/mood/youth-stress
www.nrepp.samhsa.gov
310 794-4962
Resources

• Centers for Disease Control (CDC). http://www.cdc.gov/ViolencePrevention/suicide/youth_suicide.htm
• American Foundation for Suicide Prevention, http://www.afsp.org/
• Suicide Prevention Resource Center, SAMHSA. http://www.sprc.org/
• American Association of Suicidology, http://www.suicidology.org/
COMMUNITY CONVERSATIONS

THE PERILS OF ADOLESCENCE:
UNDERSTANDING COMPLEX TEENAGE BEHAVIOR

October 26, 2015

UCLA Resnick Neuropsychiatric Hospital & Department of Psychiatry and Biobehavioral Sciences