Being Mindful of the Teen Brain: Crises, Courage & Conversation on the Pediatric Consultation Service

**Presenters**
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Learning Objectives

• Understand the neuroscientific processes that underlie teen impulsivity and emotional reactivity

• Explore how to use peer relationships to help guide youth in changing potentially problematic, self-defeating behavior

• Adopt a stance that validates the role that substance use or smartphone use may be playing in a youth’s life while at the same time challenging them to live life in ways more healthy, sustainable, and resilient
http://www.movingtraditions.org/Teen-Brain
OHSU CAP CL Statistics

Data provided by Dr. Kyle Johnson
Suicide Attempts by Month

Number of Patients

January  | February | March  | April | May    | June   | July   | August | September | October | November | December

Data provided by Dr. Kyle Johnson
OHSU CAP CL Statistics

• 2018 YTD
  • 96 individual cases
  • 1/3 were suicide attempts
  • 90% of suicide attempts were by toxic ingestion
  • Have provided 8 with lockboxes

Data provided by Dr. Kyle Johnson
Case 1

- 15 year old Caucasian young man
- Self-inflicted gun shot wound
- Parents caught him using marijuana, threw out his pipe and told him that he would be evaluated for treatment the following morning

https://thefreshtoast.com/marijuana-hangovers-are-real-but-misunderstood
The Adolescent State of the Brain

Develops with age/experience: MATURES LATE IN ADOLESCENCE

Regulation, Judgment, Reasoning

VULNERABILITY!

Triggered with puberty/hormone changes: ACTIVATED EARLY IN ADOLESCENCE

Reward, Emotion
Immaturity of Adolescent Appreciation of Time and Consequences

From Steinberg et al., 2009 Child Dev
Adolescent Emotional Responsiveness

- Adolescence, beyond other periods of life, is a time of increased emotional responsiveness/intensity
- The amygdala is associated with the perception of emotion
- Adolescents show greater amygdalar response to negative stimuli than children or adults

From Casey, Annu Rev Psychol 2015

From Monk et al., NeuroImage 2003
Emotional Context Influences Adolescent Inhibitory Control

From Somerville et al., 2011, JCN
Stress Impacts Inhibitory Control and Brain Functioning in Adolescents

From Rahdar & Galvan, NeuroImage 2014
Case 2

- 14 year old young woman
- Suicide attempt by toxic ingestion of her own sertraline
- Father caught her posting pictures of her cuts on Instagram and took away her phone indefinitely
- Patient complained: “But my friends make me feel better, and I need my phone to talk to them!”

http://blog.batteriesplus.com/2014/being-smart-about-smartphone-batteries
Adolescent Social Functioning

- Adolescence is a time when peer socialization becomes most pronounced
- Perceived perceptions by peers are of greater importance to adolescents
- Peers influence decision making more during adolescence

From Sebastian et al., 2010 Brain Cogn

From Chein et al., 2011 Dev. Sci.
Case 3

• 14 year old 9th grader
• Diagnosis of ADHD, inattentive type in the past
• No current treatment
• Patient’s mother would regularly take away computer and gaming console:
  • when patient was too difficult to wake in the morning after late night gaming
  • When patient got behind on homework

Patient protested, punched his wall and said: “I might as well just kill myself.”

This lead to an ED visit where we evaluated him.

We discovered that growing up, one of his first favorites that helped him feel connected to others was Minecraft.

He now enjoys:
- An massive online arena game where he joins with a specific group of friends from school
- Another game where he plays solo
- A battle game where he joins teams online

Escapism is an oft-heard cry against gaming’s supposed evils; VR helmets covering the eyes and ears of drooling addicts, trapped alone in a cyberpunk dreamscape. But escapism isn’t necessarily, in and of itself, evil. It can be a place for experimentation with concepts unavailable in real life, or a temporary respite from the pressures of the world.

-Patrick Lum, The Guardian¹
Diagnostic Considerations

• To what extent should we consider smartphone and video game use addiction during adolescence?

• How do we conceptualize these behaviors when they appear to be normative?

Diary of a Wimpy Kid, Jeff Kinney
The Criteria for Other (or Unknown) Substance-Related Disorders is often applied to video games:

- The substance is often taken in larger amounts or over a longer period than was intended
- There is a persistent desire or unsuccessful efforts to cut down or control use of the substance
- A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects
- Craving, or a strong desire or urge to use the substance
- Recurrent use of the substance resulting in failure to fulfill a major obligation (work, school, home)
- Important social, occupational, or recreational activities are given up or reduced by of use of the substance
- +Tolerance
- +Withdrawal
Positive and Negative Influences

• Positive influences of social media:
  • Psychological well-being
  • Social connectedness
  • Empathy

• Negative outcomes of social media and video game use:
  • Psychiatric comorbidity
  • Sleep disturbance
  • Greater risk for other addictions
  • Altered self-regulation and/or reward response

• Cannabis use:
  • Psychiatric comorbidity
  • Cognitive impairment
  • Perceived anxiety reduction
What Do We Say to Teens and Parents?

Problem
Solution
**Recommendations**

- Be aware of the behavior (e.g., social media, substance use, video games)
- Set expectations and limitations
- Explore the pros and cons
- Keep conversations going...
- Model appropriate behavior
- Look for symptoms of problematic use
Thank You & Time for Questions

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