II. Down to the Crossroads: PTSD, FASD, ADHD

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Objectives

• notice and help with behavior that indicates problems with ‘executive functioning’

• be alert to the causes of inattention, impulsivity, emotional lability

• provide trauma-informed, integrated treatment for people with executive function problems
What are executive functions?

- **Impulse control** (resisting temptation, overcoming strong emotion, etc.)
- **Selective attention** (resisting distraction)
- **Sustained effort, delayed gratification**
- **Flexibility** (mid-course corrections)
- **Consistent sense of time**
- **Prioritizing, planning ahead**
The pre-frontal cortex (PFC)
It’s a delicate balance

instant threat assessment, “fight or flight” reactions
Impulse control, anticipating consequences, overriding emotions

Growth continues into late 20’s

Insel, T. Perspectives, Nature, Nov 11, 2010
Thinking, ‘hot’ and ‘cold’

• it’s harder for everyone to make good decisions when we’re very angry, scared, excited

• being able to think first and balance strong emotional input with priorities, plans is called ‘hot’ thinking by researchers

• this is an important part of impulse control
ADHD: what is it really?

- In ADHD, executive function (PFC) signals are relatively weak
  - impulsivity, distractibility, inattention
  - emotional outbursts
  - poor ‘hot’ thinking
  - ‘spacing out’, being late, losing things
<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Today’s Date</th>
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<tbody>
<tr>
<td><strong>Part A</strong></td>
<td></td>
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<tr>
<td>1. How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?</td>
<td>Never</td>
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<td>2. How often do you have difficulty getting things in order when you have to do a task that requires organization?</td>
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<td>3. How often do you have problems remembering appointments or obligations?</td>
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<td>4. When you have a task that requires a lot of thought, how often do you avoid or delay getting started?</td>
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<td>5. How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?</td>
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<td>6. How often do you feel overly active and compelled to do things, like you were driven by a motor?</td>
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<td><strong>Part B</strong></td>
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<td>7. How often do you make careless mistakes when you have to work on a boring or difficult project?</td>
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<td>8. How often do you have difficulty keeping your attention when you are doing boring or repetitive work?</td>
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<td>9. How often do you have difficulty concentrating on what people say to you, even when they are speaking to you directly?</td>
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<td>10. How often do you misplace or have difficulty finding things at home or at work?</td>
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<td>11. How often are you distracted by activity or noise around you?</td>
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<td>12. How often do you leave your seat in meetings or other situations in which you are expected to remain seated?</td>
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<td>13. How often do you feel restless or fidgety?</td>
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<td>14. How often do you have difficulty unwinding and relaxing when you have time to yourself?</td>
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<td>15. How often do you find yourself talking too much when you are in social situations?</td>
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<td>16. When you’re in a conversation, how often do you find yourself finishing the sentences of the people you are talking to, before they can finish them themselves?</td>
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<td>17. How often do you have difficulty waiting your turn in situations when turn taking is required?</td>
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<tr>
<td>18. How often do you interrupt others when they are busy?</td>
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Fetal Alcohol Spectrum Disorders and executive functions

- heavy prenatal alcohol exposure causes smaller brain size (especially frontal cortex)
- fewer connections between brain cells in prefrontal cortex (animal studies)

Rasmussen C. Executive Functioning and Working Memory in Fetal Alcohol Spectrum Disorder
Fetal Alcohol Spectrum Disorders and executive functions

- even when facial features are normal, children exposed to alcohol have
  - problems with planning, organizing, learning from past mistakes
  - poor ‘hot’ decision making
  - these problems are independent of IQ

Rasmussen C. Executive Functioning and Working Memory in Fetal Alcohol Spectrum Disorder
Trauma exposure and executive function

- Study of children exposed to traumatic events (not diagnosed with PTSD)
- Ethnically diverse, mean age 10
- Poorer inhibition, working memory, auditory attention
- Independent of socioeconomic status

https://doi.org/10.1016/j.chiabu.2008.08.002
PTSD and executive functions

• study of adults in the Netherlands

• PTSD patients found to have poorer executive function than trauma-exposed controls (without PTSD)
  • response inhibition, planning, working memory
  • those with ‘numbing’ or co-occurring depression were most affected

https://doi.org/10.1016/j.nlm.2014.01.003
The amygdala in PTSD

- those with PTSD have higher amygdala activation with fearful face exposure, which does not fade on repetition
  - less counterbalancing input from the PFC
  - overreaction, less dampening, and poor extinction

It’s a delicate balance

instant threat assessment, “fight or flight” reactions
ADHD and substance use disorders

• people with ADHD are more likely to have substance use problems

• people who still meet all criteria for ADHD as adults are 3x more likely to have a SUD
Childhood trauma and alcohol

- those with ACE’s score of 4 or higher are more likely to have alcohol problems
  - women almost 3x
  - men 2x

Fetal Alcohol Spectrum Disorders and alcohol/drug use disorders

- high rate of drug/alcohol dependence
  - studies vary from 45% to >60%

PTSD and alcohol use disorders

- people with PTSD are more likely to have alcohol problems
  - studies on adults range from 25% to >75%
PTSD and alcohol use disorders

- PTSD is associated with a 2-fold increase in alcohol misuse among Iraq and Afghanistan veterans over all, even more in those with:
  - emotional numbing
  - hyperarousal
  - depression

The crossroads: where PTSD, FASD, and ADHD meet

ADHD
- hyperactivity
- impaired executive function
- risky behavior
- accidents

FASD
- learning problems, risky sexual behavior
- physical signs
- intellectual disability
- abuse, neglect

PTSD
- nightmares
- avoidance
- hypervigilance
What’s at the crossroads?

• impulse control problems
• poor thinking under emotional conditions
• difficulty with focus, planning
Common factors at the crossroads

- higher risk of:
  - substance use disorders
  - academic failure
  - legal problems
  - depression
  - interpersonal violence
People with impaired executive function get frustrated with themselves

- they care how their behavior affects others, they worry about the future, and they know what they SHOULD do
- but the motivational “gears” that involve prioritizing, planning, and staying focused simply have no (or fewer) teeth
- the internal sense of failure leads to anger at self, giving up, shutting down, depression
How can we help improve executive function?

• medications that increase the relative input of PFC circuits
  • used widely in ADHD but less is known about meds for other executive function problems
  • stimulants are most prescribed and most effective
How can we help improve executive function?

- environmental accommodations
  - low distraction, reminder alerts
- structured, consistent routine
- coaching and group therapies for social skills
How can we help improve executive function?

• break up tasks into manageable ‘chunks’
• focus on mastering the important skills
  • GETTING OUT OF THE HOUSE ON TIME
How can we help improve executive function?

- cognitive behavioral therapy helps adults more than children
- all effective treatments need to be ongoing, and are interactive
Summary

• ADHD, trauma, PTSD, and alcohol exposure are all tied to problems with executive function

• this is at the root of much of the functional impairment these problems cause
  • school, work, the family, the law
Summary

- problem-solving therapies, life skills training can help strengthen executive function
- medication can be very helpful
- consider the environment
  - reduce distractions
  - use planners, alerts
  - break tasks up into small pieces
Summary

• children with executive function problems benefit from accommodations (‘504’) or an IEP to improve school success

• adults respond to cognitive behavioral therapies
questions
“Are you reading
my mind?”

“Why ever would
you think that?”