The Complex World of Conduct Disorder

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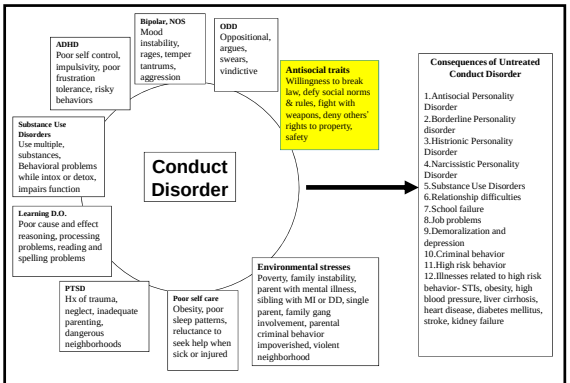
Faculty Financial Disclosure

I have nothing to disclose.



The Complexity of Conduct Disorder

First Point:
It is easy to "get" the diagnosis of Conduct Disorder

Also, it is easy to know someone has it when you interview them for a few minutes

Diagnosing CD

- Aggression, destruction of property, stealing and lying, violation of rules
- 3 symptoms, 12 months
- Impairment
- Onset before 10, but later is possible

Areas of research on CD youth

Where is the lesion?

Amygdala hypo-activity to fearful faces

- CD boys with callous/unemotional traits (thought to have impaired processing of visual and auditory displays of fear and sadness) vs. age matched controls
- fMRI, stimulus of fear inducing pictures
- Lesser right amygdala activity
- Similar findings in adult psychopaths and teens with CD

Jones, AJP, 2009

Autonomic NS deficiencies and CD

- Prediction of future conduct disorder
  - Higher electrodermal conduction (girls)
    - Relates to less emotional control and behavioral inhibition
  - Lower resting heart rate during anticipation (boys)
    - Relates to less arousal when higher would be expected
  - Less respiratory related sinus arrhythmias (boys)
    - Relates to less emotional control
  - Severity of aggression inversely related to ANS arousal

-Beauchanie JAACAP, 2008

Orbito-frontal-paralimbic motivation networks and CD

- CD kids, ADHD kids- not co-morbid, no meds
- fMRI
- Tasks calling for sustained attention;
  - ADHD deficits VLPFC,
  - CD deficits OFP (insula, hippocampus, anterior cingulate, cerebellum)

Rubia AJP, 2009

Orbito-frontal cortex and limbic system structural abnormalities and CD

- ADHD, CD boys, aged matched controls
- MRI studies
  - CD boys had 6% less gray matter volume
    - Reduced right temporal; prefrontal cortex gray matter
    - Reduced amygdala, hippocampus volume

Huebner JAACAP 2008

Second point:
The Associated Symptoms of Conduct Disorder are what make these kids so hard to handle…

…and so dangerous for those around them!

Associated Symptoms of CD

- Substance use disorders
  - Early onset
- Mood instability
  - Anger, aggression
- Impulsivity
  - And other ADHD symptoms
- Learning disabilities (more about this later)
- Blame others for their problems
- Poor frustration tolerance
- Recklessness, accident prone, injuries
- Misperception of neutral behavior

Third Point:

Trauma, poor early childhood caregiving, bad modeling, and negative peer influences play a big role in CD kids' bad behavior

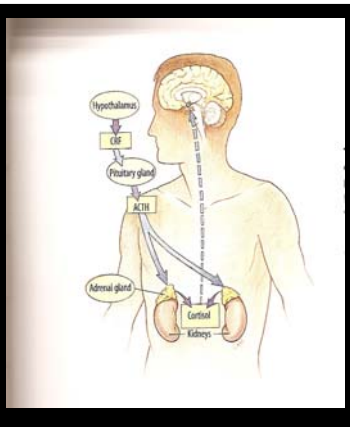
Also makes it tough to form a trusting relationship

Homeostasis, allostasis, & allostatic load

- Homeostasis- maintain internal states
- Allostasis- neurobiologic systems that allow you to maintain homeostasis
- Allostatic load (or overload)- physiologic dysregulation of multiple biologic systems

Stress Emotion Systems

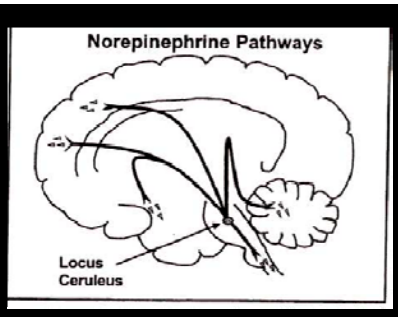
- The multiple, integrated systems that both alert us to danger and prevent "overshoot"
  - HPA
  - Locus Coeruleus
  - SAM (Brain stem and sympathetic NS)
  - Parasympathetic NS
  - Cortical inhibition



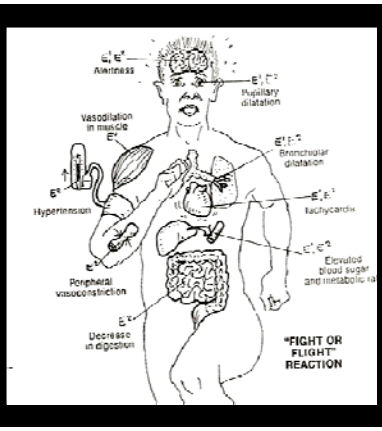
HPA Axis-

Hypothalamus
Pituitary
Adrenal
+
Hippocampus
Prefrontal cortex

Uses glucocorticoids- minutes to hours



Locus Coeruleus and Norepinephrine- Alert, alarm, and anxiety



The "Fight or Flight" response

NE effects

Allostasis and allostatic load

- Allostasis- the body's ability to change in order to preserve homeostasis
  - Examples- sweat, anaerobic metabolism
- When over stressed, this can over tax the bodies adaptive changes
- The relatively permanent damage is called allostatic load
  - Examples- sleep regulation, appetite regulation, aggression, CRH and cortisol secretion

Fear Conditioning

- Complex adaptational mechanism with psychological, behavioral, and neurobiological components
- Protects the organism from re-exposure to danger
- Encoding, consolidation, and reconsolidation of memory play a big role, difficult to extinguish

Fear Conditioning- more

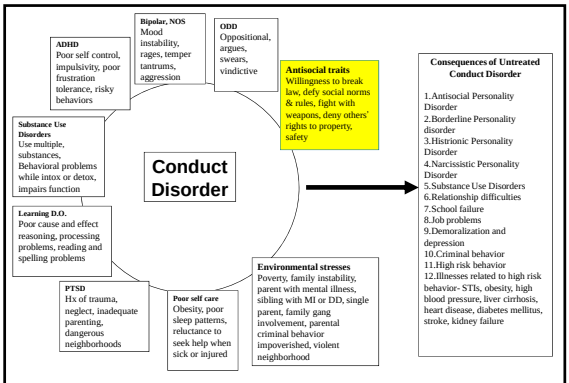
- Takes place in the amygdala (with projections to hypothalamus and brain stem)
- Includes autonomic, behavioral, and endocrine responses that signal "danger"
- CRH, cortisol, and NE play a role

Last Point:
Thinking errors plague these children's ability to be good citizens and good crooks

These errors also provide a way to begin to understand their cognitive processing of information

Thinking Problems of CD Kids

- Affect driven behavior
- Impulsive decision making
- Inability to consider multiple causality
- Compartmentalization
- Inadequate empathy
- Inadequate prioritization
- Inadequate cause and effect reasoning
- Externalization of responsibility
- Disregard for (certain) rules
- Language as behavior
- Lack of trust in adults



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