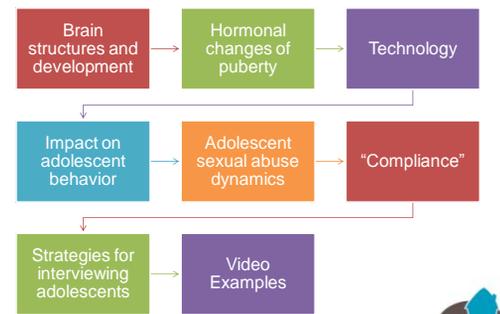


Help! I'm Drowning in Hormones: Adolescent Brain Development and More

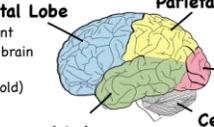
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Presentation Overview




Brain Structures



Executive Function
- reasoning
- problem solving

The Conductor
- judgement
- impulse control
- emotions

Frontal Lobe
under development
The last part of the brain to mature (at about 24 years old)

Parietal Lobe
under development
- numbers
- processing sensory input
- language
- analytical abilities

Occipital Lobe
visual processing

Temporal Lobes
hippocampus - long-term memory
amygdala - emotional center

Cerebellum
supports higher learning
- math, music, advanced social skills
under major development

(www.montessorimuddle.org, 2012)



Adolescent Brain Development Key Changes (Powell, 2006)

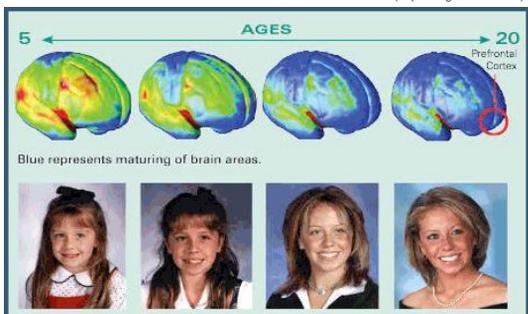
- Loss of gray matter - through pruning redundant brain connections
- Myelin Increases - enhancing transmission of brain messages
- Correlates with advancing cognitive abilities

BUT...



The Prefrontal Cortex Continues to Develop into Early Adulthood

(http://blog.lib.umn.edu)



Blue represents maturing of brain areas.

Brain Development Late Adolescence (Ruder, 2008)

First-year undergraduates vs. postdocs

Subtle changes in five areas of brain

- Preparing for action and
- Forming strategies
- Integrating sensory input, emotions, body state and context

Gender Differences



The Prefrontal Cortex “The Brains CEO”

(Walsh, 2013; Weinberger et al., 2005)

- Impulse Control
- Sensitivity to feedback
- Setting priorities
- Organizing things
- Adjusting behavior
- Insight & Empathy
- Inhibiting inappropriate behavior
- Making decisions
- Initiating appropriate behavior
- Stopping an activity upon completion
- Planning which requires working memory



Hormones & Brain Development (Dahl, 2003)

- Hormones influence physical systems
 - estrogen, testosterone, growth, others
- Brain development influences
 - emotion,
 - motivation
 - behavior



Adolescent Brain Development Risk Taking (Dahl, 2003)

- Puberty linked to increase in seeking out risks, thrills, excitement and intensity
- “Reward center” of brain (ventral striatum), is more active (Society for Neuroscience, 2007)
- Benefits are given more weight than risks
- Limited cognitive control over high-risk behaviors



Emotional Perceptions

(NIMH, 2010)



Adolescents rely on emotional/gut reactions
More likely to misread emotional signals



Adolescent Brain Development Decision Making

- Rely on emotion centers of brain when making decisions (Coalition for Juvenile Justice, 2006)
- Lack “wisdom” – ability to instantly bring knowledge to bear in a situation (Powell, 2006)
- Judge “safe” vs. “dangerous” – work harder and responses less automatic (Phillips, 2004)
 - “It’s just words, you can make it up. It doesn’t mean anything and you can hit send and it’s gone.”



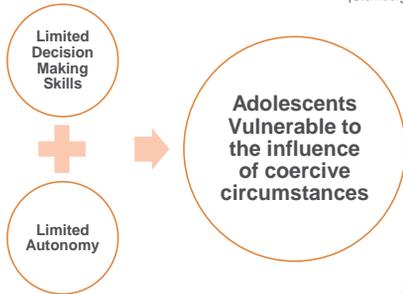
Adolescent Brain Development Social Interactions

- Peer Influence – direct and indirect effect on judgment (Steinberg & Scott, 2003)
- Imaginary Audience – believe others are constantly observing and evaluating them (Sebastian et al., 2008)

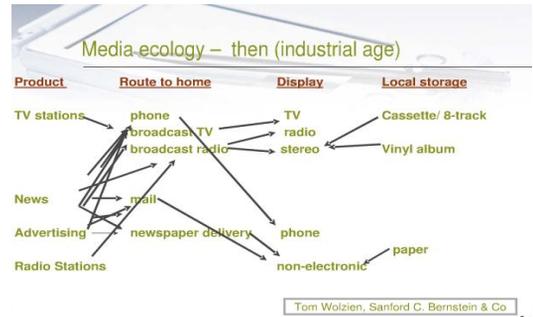


Adolescent Brain Development Decision Making

(Sternberg & Scott, 2003)

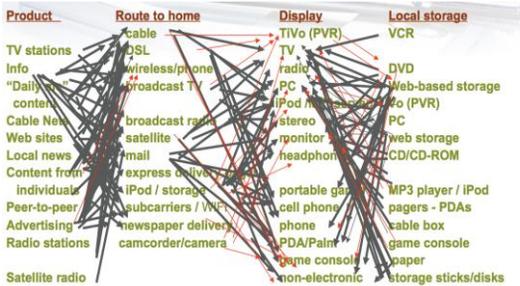


The Influence of Technology THEN



Tom Wolzien, Sanford C. Bernstein & Co.

The Influence of Technology NOW



Adapted from Tom Wolzien, Sanford C. Bernstein & Co

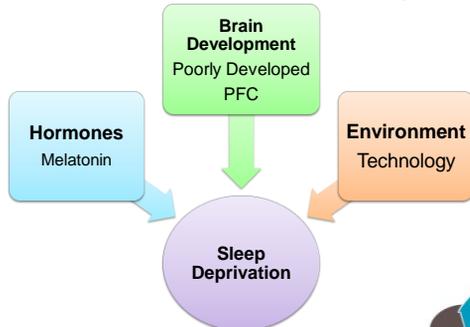
The Influence of Technology

- Less personal form of communication (Johnson, 2011)
- Unlimited access to information/influence
- Plays a significant role in daily experience
- May impact our ability to pay attention (Barniskis, 2009)
- Limits the ability of adults to offer guidance and supervision



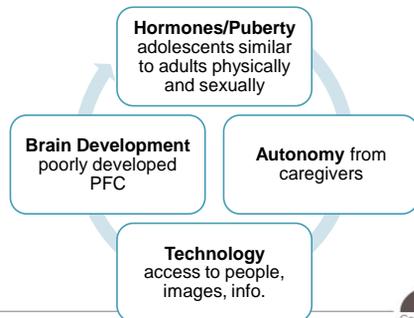
The Intersection: Adolescent Sleep Patterns

(Dahl, 2003)



Adolescent Abuse Dynamics

The Intersection



Adolescent Sexual Abuse Dynamics

(Lanning, 2002)

- Grooming
- Seduction – courted, groomed
- Manipulation
- Influence of hormones
- Self Blame
- “Consent”
- Societal influence



Seduced Adolescents

(Lanning, 2002)

Often:

- Trade sex for attention
- Confused over sexuality & feelings
- Describe their victimization in socially acceptable ways
- Minimize their responsibility
- Deny or exaggerate their victimization
- Embarrassed
- Guilt-ridden



Adolescents Influences on Disclosure

(Whitman, 2007)

Reason's youth don't tell adults – self report

- Won't be believed or taken seriously
- Fear retaliation by perpetrator or others
- Fear punishment
- Embarrassed
- Don't want others to know



“Compliant Victims”

(Lanning, 2002)

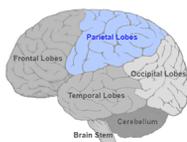
- Does understanding brain development influence our perspective?
- Contradiction between adolescent “victims” and “offenders”
- Consent is issue only for adult victims
- Are there better descriptors?

“vulnerable” “exploited” “sexually abused”



Interviewing Adolescents

Making the Science Matter
Applying our understanding to sexual abuse allegations



Forensic Interview Strategies Before the Interview

(Drury, 2003)

- ID biases about “teens”
- Adolescent perceptions of authority
- Prepare to listen respectfully. This is **NOT** an interrogation.



Forensic Interview Strategies Before the Interview

Sexual activity is not the fault of the victim even if the child: (Lanning, 2002)

- Did not say “no”
- Did not fight
- Initiated the contact
- Accepted gifts or money
- Actively cooperated
- Did not tell
- Enjoyed it



Forensic Interview Strategies Before the Interview

- Prepare for individual circumstances
- Think about specific areas of development (brain, biological, social, etc.)
- Consider how you will explore technology



Interviewing the Adolescent Making the Science Matter

Case Example: 15-year-old boy

Allegation:

- Sexual abuse by adult male neighbor who is the father of the boy’s close friend
- Boy is hospitalized due to suicidal thoughts
He disclosed to a hospital social worker
- Report includes penetration, back rubs and sexual texting



Forensic Interview Strategies During the Interview

- Avoid labels that may have negative connotations. You are talking with a **PERSON**
- Don’t short change rapport building
- Spend time on narrative practice
- Reduce your position of authority



Adolescent Interview Strategies During the Interview

- Explain the interview process throughout
 - Video-recording and observers
 - Your need to clarify
 - Why you ask so many detailed questions
 - Provide orienting messages

*** Especially important given the influence of technology on adolescent communication ***



Forensic Interview Strategies During the Interview

- Allow the story of love/seduction

“He’s like the adult mentor type of thing. He was the one I talked to about stuff. With this thing that he wanted, I was like, ya know as long as it’s just over texting I can just pretend that I’m doing whatever it is that he wants so that he’ll keep talking to me.”



Forensic Interview Strategies During the Interview

- Remember - more likely to misperceive or misunderstand the emotions of adults.
- “...leading to miscommunication both in terms of what the teen thinks the adult is feeling and in terms of the teen’s response.”
(ACT for Youth Upstate Center for Excellence, 2002)

Avoid asking WHY?



Forensic Interview Strategies During the Interview

- Do not attempt to convince adolescents they are victims or give advice *(Connell & Finnegan, 2010)*
- Avoid judgment in forming your questions
- Allow for any truthful answer *(Lanning, 2002)*
- Be careful about your non-verbals



Forensic Interview Strategies During the Interview

Silence

- Don’t be afraid of silence
- Pacing
- Can convey respect
- Some people need silence in order to...



Forensic Interview Strategies During the Interview

- Offer appropriate support & reassurance

“The way my mind calculated it, it was like, if something’s gonna happen I don’t want to remember what it was so if I’m gonna drink, I’m gonna drink a lot. So I drank a lot. But I didn’t really forget.”



Forensic Interview Strategies During the Interview

- Allow and acknowledge any feeling(s)

“At first I was kinda really pissed off then I was regretful after that.”



Forensic Interview Strategies During the Interview

- Consider offering reassurance that conveys a message of empowerment

“I’m not going to make you talk about anything but, I might need to ask some questions so I can make sure I understand... You just tell me what you can tell me, and then I may ask you some questions and you just answer what you’re able to answer”



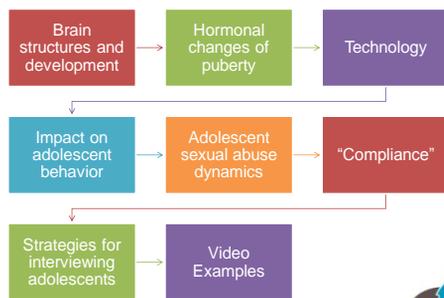
Forensic Interview Strategies During the Interview

- Assist adolescent in describing their process of disclosure

"I was really just like afraid of how they would react. That's the main reason I didn't want to tell anyone. It feels like I would push people away and freak them out if they knew something like this."



Questions



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