Social Media and the Teenage Brain
https://tinyurl.com/teenbrain19

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A Short Course in Brain Development
The Brain Develops Back to Front

Front: sequencing information, prediction, inference, critical thinking, judgment
Experience Matters

• Brain development is “activity-dependent”
• Every experience excites some neural circuits and leaves others alone
• Neural circuits used over and over strengthen, those that are not used are dropped resulting in “pruning”
A child’s brain is more sensitive to stress than the brain of adults:

- Processing speed for young brains is 50-80 times faster than adult brains. So, it overloads easier & quicker.
- “Emotional” brain develops before the “rational” brain
- Emotional pain is processed in the same part of the brain as physical pain. But, fewer words to describe or experiences to help put in perspective.
Intense feelings informed by hormones
Puberty=awkward
Self Conscious and egocentric
Self esteem often decreases
Pressure to perform
Sleep disturbance is common
Strong sense of justice and fairness
Leap to conclusions
Need for privacy but crave attention
### Key Brain Structure—Prefrontal Cortex

<table>
<thead>
<tr>
<th>Cognitive Function</th>
<th>Associated Digital Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision making</td>
<td>Whether or not to post something</td>
</tr>
<tr>
<td>Future planning</td>
<td>Posts have future consequences</td>
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<tr>
<td>Inhibiting Inappropriate behavior</td>
<td>Maladaptive behaviors: cyberbullying, sexting, etc.</td>
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<tr>
<td>Social Understanding</td>
<td>Comparison to unrealistic, untrue posts</td>
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<tr>
<td>Self Awareness</td>
<td>Inability to regulate time</td>
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<tr>
<td>Empathy</td>
<td>Difficulty with perspective and tone; misplaced altruism</td>
</tr>
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See more from Dr. Ryan Smith [here](#)
Dopamine

✘ Neurotransmitter, part of the reward and emergency response systems

✘ Dopaminergic pathways are “wider” in adolescence. This means their brains are more sensitive to the effects.
Adolescence is a quest for dopamine!

~Dr. Ryan Smith
Dopamine Dispensers
Technology: Frenemies with the Brain
Teens consistently report that technology makes them feel connected!
This 2015 national survey details the media habits and preferences of American 8- to 18-year-olds and shows just how central a role media plays in the lives of Generation Z.

**AVERAGE DAILY MEDIA USE**

**TWEENS**

- 6 hours
  - 5:55 Total Hours
  - 4:36 Hours of Screen Time

**TEENS**

- 9 hours
  - 8:56 Total Hours
  - 6:40 Hours of Screen Time

Multitasking: The New Normal

- 50% use social media
- 51% watch TV
- 60% text
- 76% listen to music

Learn more [here](#)
2016 UCLA Study (fMRI)

✘ More likely to respond to posts with multiple likes, regardless of whether it was positive, neutral or negative.

✘ When teenagers looked at risky photos compared with neutral photos, less activation in the brain’s dorsal anterior cingulate cortex, bilateral prefrontal cortices and lateral parietal cortices.

http://newsroom.ucla.edu/releases/the-teenage-brain-on-social-media
Mental Health Concerns

- A study published in *Computers in Human Behavior* found that the use of multiple social media sites is more strongly associated with depression than the amount of time spent online.
- According to the study, people who used more than seven social media platforms had more than three times the risk of depression than people who used two or fewer sites.
- In fact, some studies have found that the larger a teen's social circle online the more anxiety they feel. It takes a lot of time and effort to keep up with the unspoken rules and culture of each social media platform.

https://www.verywellfamily.com/ways-social-media-affects-teen-mental-health-4144769
Royal Society for Public Health

X Survey results found that Snapchat, Facebook, Twitter and Instagram all led to increased feelings of depression, anxiety, **poor body image and loneliness**.

X The average woman between 16 and 25 years old spends over **five hours a week** taking and managing selfies.

X “Pretty filters” on Instagram and Snapchat.

X Apps such as Facetune and Retouch Me.

https://www.rsph.org.uk/asset/AAFB7DC1-35CE-4097-B26321C1667B5333.2D2662B7-A714-4ACB-A94A63BA544A8267/
Sleep Loss 2017

✘ One-fifth of the teens said they "almost always" wake up during the night and log in to social media. The study also revealed that girls were significantly more likely than boys to wake up and check social media.

✘ Sleep loss impairs: immune response, memory and concentration

The mere presence of the phone creates a measurable impact on the capacity for sustained attention!
The following brain structures seem impacted by social media use:

✗ Amygdala (panic center)
✗ Orbital Frontal Cortex (associated with processing rejection)
✗ Anterior Cingulate Cortex & Insual (active in social inclusion/exclusion)
✗ Striatum (associated with prediction of rejection)
✗ Dorsolateral prefrontal cortex (modulates aggression following rejection)

https://www.rsph.org.uk/asset/AAFB7DC1-35CE-4097-B26321C1667B5333.2D2662B7-A714-4ACB-A94A63BA544A8267/
We argue that adolescents are highly sensitive to acceptance and rejection through social media, and that their heightened emotional sensitivity and protracted development of reflective processing and cognitive control may make them specifically reactive to emotion-arousing media.

Increase in white matter
(communication between cells/outgoing messages)

Decrease in grey matter
(information coming in, sensory perception)
Relationships may feel as “real” online as they do in person.

Evidence suggests that social media use may actually improve prosocial behaviors—namely EMPATHY.

Control vs. Influence:
What can I do?
Adolescents are capable of thinking about things in both concrete and abstract terms--however, they often struggle to connect ideas. You have to help them make associations!

Need specific examples to tie to abstract ideas!
Use Skills of Influence

- Directly teach “netiquette”
- Help them develop self-regulation skills
- Help them know how to report concerns.
- Recognize the “big” feelings and relationships feel real to them
- Use movies, TV, etc. to explore relationships, decision making and ethical dilemmas
- Develop a habit of asking reflective questions, can be great for writing prompts
- Help them explore their own online footprint
- See more info [here](#)
Resources

- Social Skills and Technology
- Dr. Ryan Smith
- How Social Media Affects Teenagers
- Social Media for Teachers
- Common Sense Census
- Danah Boyd’s papers
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