THE ADOLESCENT BRAIN

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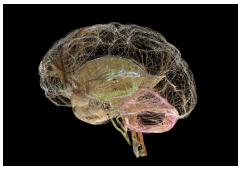
The adolescent★ brain:

★adolescence starts around 11 and lasts until 24/25, by which time the brain is usually fully integrated

1. Adolescence is an important time for brain ***development, adaptation and learning***
2. Brain development is related to ***social experiences*** during adolescence.
3. Teen brains may respond differently to ***stress***.
4. Most teens do not get enough ***sleep***.
5. Adolescence is a time of risk for ***mental illness*** and an opportunity to ***build resilience***.



National Institute for Mental Health; 2023

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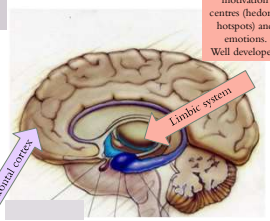
1. Adolescence is an important time for brain ***development, adaptation and learning***

- Increasingly sophisticated capacity for challenge and nuance
- Strong focus on justice
- Building executive function skills
- Pruning and strengthening of circuits and networks
- Fully wired and connected frontal lobes still a decade away
- Social brain: dominant



Reward and motivation centres (hedonic hotspots) and emotions. Well developed.

Reasoning, analysis and emotion regulation centres. Not fully developed until 24

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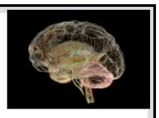
2. Brain development is related to ***social experiences*** during adolescence



Teenage Brain and Behavior (nationalgeographic.org)

Adolescents are more likely than younger children to compare themselves with others and to understand that others are making comparisons and judgements about them; they also begin to place higher value on these judgements: "looking glass self"

Adolescents feel greater stress than children or adults when being watched performing a task, as well as when they anticipate being watched: "imaginary audience"

In 13-17 year olds, evaluations by friends affected their feelings of social or personal worth. Being rejected by peers indicated their unworthiness as individuals.

In the presence of their friends, adolescents took almost 3x as many risks as when alone, and young adults nearly twice as many.

(Dr Sarah Jayne Blakemore; Inventing Ourselves: the Secret Life of the Teenage Brain)

Emotions are very powerful. Impulses are very strong. The environment is challenging. "Emptying the garbage" can be necessary.

(Dr Lisa D'Amour; 2023)

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2. Brain development is related to ***social experiences*** during adolescence

What does the research show about social media?

…"**Social media acceptance** (likes, views, follows) evokes similar levels of activation in the same regions as when receiving **monetary rewards or pleasant tastes.**"

…"viewing **photos with many (compared with few) likes** was associated… with…activity in…regions implicated in **reward processing, social cognition, imitation, and attention**."

What else do experts say?

Online communications can allow young people to who are struggling to rehearse social interactions

Social media can allow pro-social behaviours to spread

American Psychiatric Association; 2023

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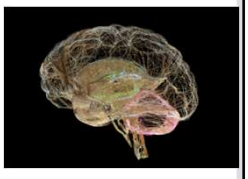
3. Teen brains may respond differently to ***stress***.

Compared to adults, teens experience:

- Elevated levels of stress hormones
- Protracted release of stress hormones
- Higher levels of stress in the evenings

Potential negative effects: cognitive capacity (concentration, learning and memory) and immune response

Proactive and reactive stress management are important



The Teenage Brain: The Stress Response and the Adolescent Brain, Russell D. Romeo, 2023

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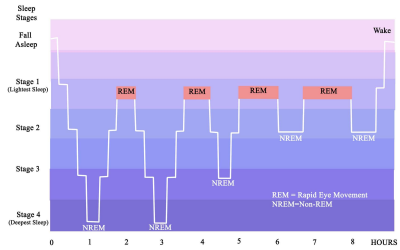
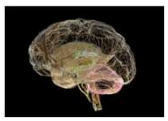
4. Most teens do not get enough ***sleep***





Later melatonin secretion

Social jet lag resulting from biological/environmental misalignment

Impact on concentration and mood regulation

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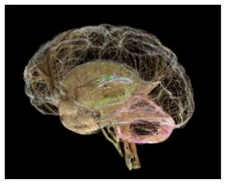
5. Adolescence is a time of ***risk*** for ***mental illness*** and an ***opportunity*** to ***build resilience***.

- 70% of MH conditions begin during adolescence
- Data!
- Spectrum
- Q: Frequency, severity, degree of impairment, degree of control/management
- Most teens do not develop a MH condition

- "Mental health is not about feeling good or calm or relaxed…It's about having feelings that fit the circumstances you're in and then managing those feelings well, even if those feelings are negative or unpleasant." (Dr Lisa D'Amour)
- Emotions as data. Use the 'tools'.



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What does the research show?

Activation in emotion and sensory processing regions of the brain is increased in adolescents compared to adults when experiencing online social exclusion

…Social media acceptance (likes, views, follows) evokes similar levels of activation in the same regions as when receiving monetary rewards or pleasant tastes

…"viewing photos with many (compared with few) likes was associated, in the adolescent brain, with greater activity in neural regions implicated in reward processing, social cognition, imitation, and attention."

• Youth with symptoms of mental illness, such as adolescents with social anxiety, depression, or loneliness, for instance, may benefit from interactions on social media that allow for greater control, practice, and review of social interactions.16 Unfortunately, these populations may also be at higher risk for some of the negative facets of social media use

• Social media offers a powerful opportunity for socialization of specific attitudes and behaviours, encouraging adolescents to follow the opinions and prosocial acts of others. The discussion of healthy behaviours online can promote or reinforce positive offline activity and healthy outcomes.

American Psychiatric association; 2023

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What mediates the effects?

- Content
- Time spent
- Time compared to IRL connection
- Vulnerability
- IRL connections
- Mood
- (Understanding of the manipulation)

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