

Tackling the wicked problem of depression in adolescents

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Why is adolescent depression a “wicked problem”?

- Occurs frequently in adolescents, even more so since the pandemic
- Associated with severe consequences including chronic depression, disability, other health problems, and suicide risk.
- Complex and heterogeneous
 - multiple mechanisms and pathways
 - different people with the same symptoms may need different treatments.



Why is it important to tackle this wicked problem early?

- Developing brain may be more malleable and amenable to intervention
- Early (successful) intervention is critical to optimize long-term outcomes



A few avenues we have been pursuing to tackle adolescent depression

- Ketamine
- Neuromodulation (e.g. transcranial magnetic stimulation, or TMS)
- Creative arts engagement



Ketamine for treatment-resistant depression in adolescents

- Open-label study (N=13)
- 6 serial infusions of IV ketamine
- Overall, depression scores improved significantly
- 5 were “responders”
- Generally well-tolerated

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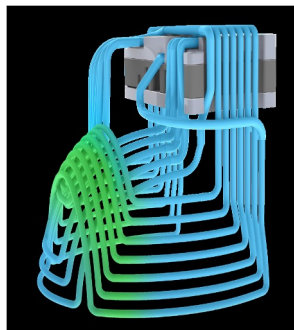
Adolescent “deep” TMS study



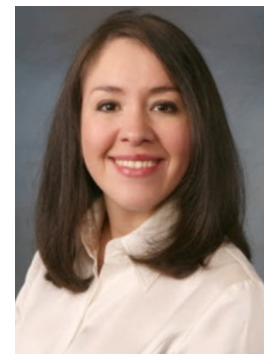
Michelle Thai
Psychology graduate student

- H1 coil
- Teens with one failed medication trial
- Left DLPFC target
- Six weeks (30 treatments)
- 3 different stimulation intensities

Thai et al., *under review*



Michelle
Corkrum,
M.D., Ph.D.



Sophia Albott, M.D.



Nathan Horek, N.D.

Results

- 14/15 Completers
- Mean depression scores improved significantly
- 6 responders
- Higher stimulation intensities seemed more effective

Creativity and mental health

- Depression creates a narrow experience
 - As depression becomes chronic, teens develop negative views of themselves and the world, drop out of activities, and withdraw from relationships.
- Can engaging the arts help teens break out of this narrow rigidity?
 - Inspiration
 - Engagement
 - Social connection
 - Finding new meaning
 - Agency / empowerment
 - Self-discovery / authentic expression
 - Flexible thinking

Cullen et al, *under review*



Thank you!

Funding Sources

National Institutes of Health
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Foundation

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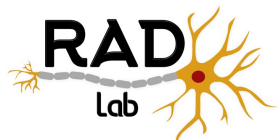
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MnDRIVE



Artwork by Suyao Tian
Poem by Yuko Taniguchi
Arrangement by Peng Wu



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