

# Epigenetics, resilience and brain stimulation

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Proposition accompanying the PhD thesis  
Epigenetics, resilience, and brain stimulation: Advances in the mechanistic and therapeutic  
utility in patients with affective (PTSD and mood) disorders

Nagy A. Youssef (January 23, 2020)

1. Epigenetic mechanisms contribute to depression and suicide, such as hypermethylation of brain-derived neurotrophic factor (BDNF) and Tropomyosin Receptor Kinase B (TrkB).
2. Trauma and PTSD symptoms can be passed down to offspring transgenerationally by epigenetic mechanism via the process of DNA methylation.
3. Creating an epigenetic consortium to pool data from multiple sites can improve epigenetic research by increasing the sample size towards the numbers needed for statistical power to detect differences, if a difference exists (this thesis).
4. Measures of higher resilience predict lower suicidality and lower levels of depressive symptoms (this thesis).
5. After remission of depressive episodes with ECT, patients with treatment-resistant depression (TRD) have better outcomes in terms of symptomatic remission with combined continuation ECT and pharmacotherapy than either alone (this thesis).
6. After remission of depressive episodes with ECT, patients with TRD have better quality of life with combined continuation ECT and pharmacotherapy than either alone (PRIDE trial; this thesis).
7. ECT may have a future role in the management of treatment-resistant PTSD (this thesis)
8. Regardless of total stimulus change (mC), cognitive side effects are much less with lower current amplitude than standard current amplitude, and likely with comparable efficacy (proof of concept LAP-ST trial; this thesis).
9. *"If you do not know where you are going, every road will get you nowhere."*  
Henry A. Kissinger
10. *"Truth is stranger than fiction, but it is because Fiction is obliged to stick to possibilities; Truth isn't."*  
Mark Twain

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Mark Twain