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SunCloud Health Continuing Education Series

Transdiagnostic, integrated care for people with complex co-occurring disorders.

Therapeutic Support for Children & Adolescents Struggling with Self-Harm

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Self-Harm in Children & Adolescents

Clinical Understanding, Neurobiology, and
Evidence-Based Intervention

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Learning Objectives

- Review prevalence and trends
- Understand neurobiology and psychology
- Recognize risk factors and screening tools
- Identify evidence-based interventions
- Use level-of-care decision making

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What is Non-Suicidal Self-Injury (NSSI)?

- Intentional destruction of body tissue without suicidal intent
- Examples include cutting, burning, scratching, hitting
- Often used as emotional regulation
- Associated with depression, trauma, distress

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Why This Matters

- Self-harm predicts future suicide risk
- Increasing prevalence among adolescents
- Typical onset ages 11–15
- Early intervention improves outcomes

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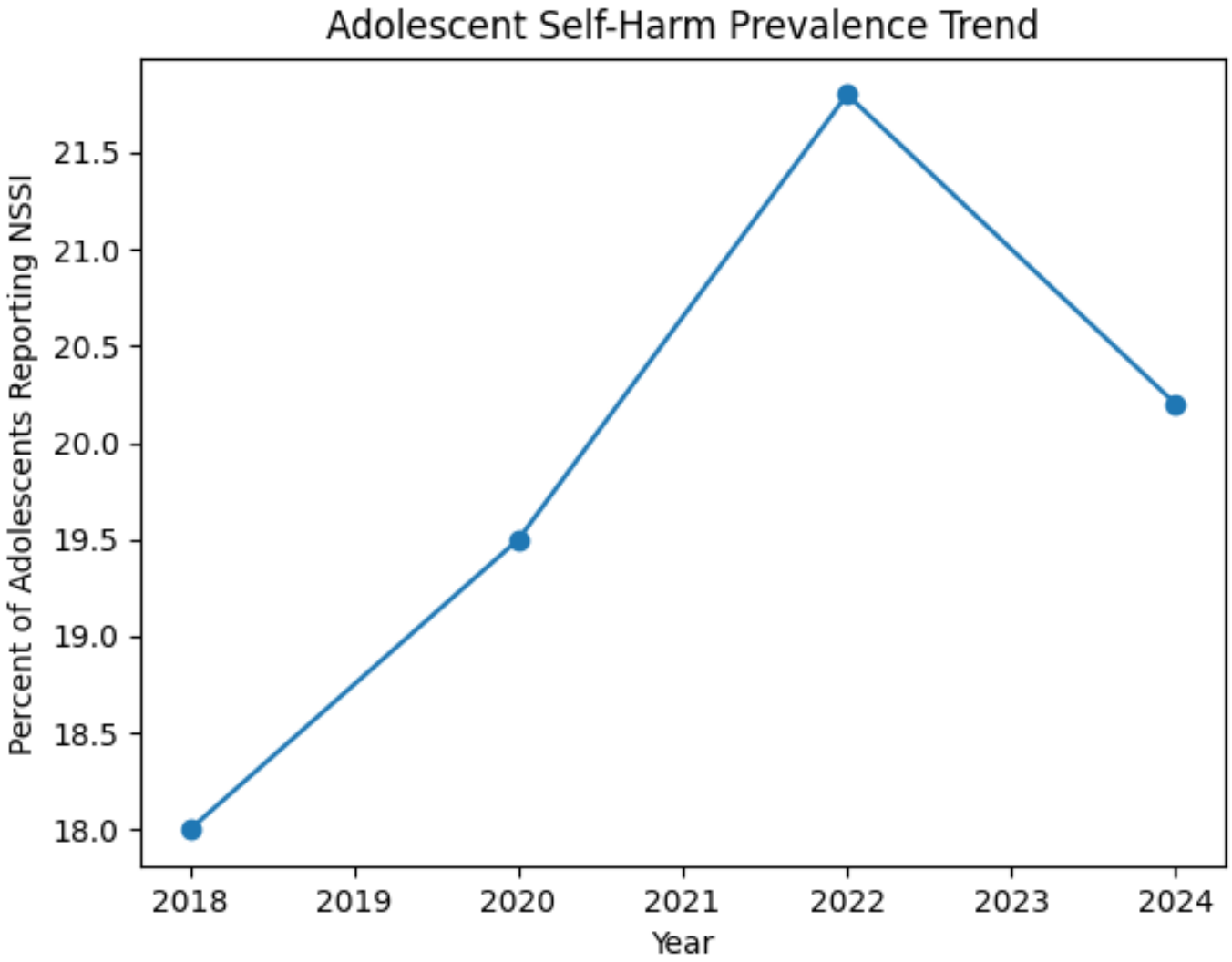
Trend in Adolescent Self-Harm Rates



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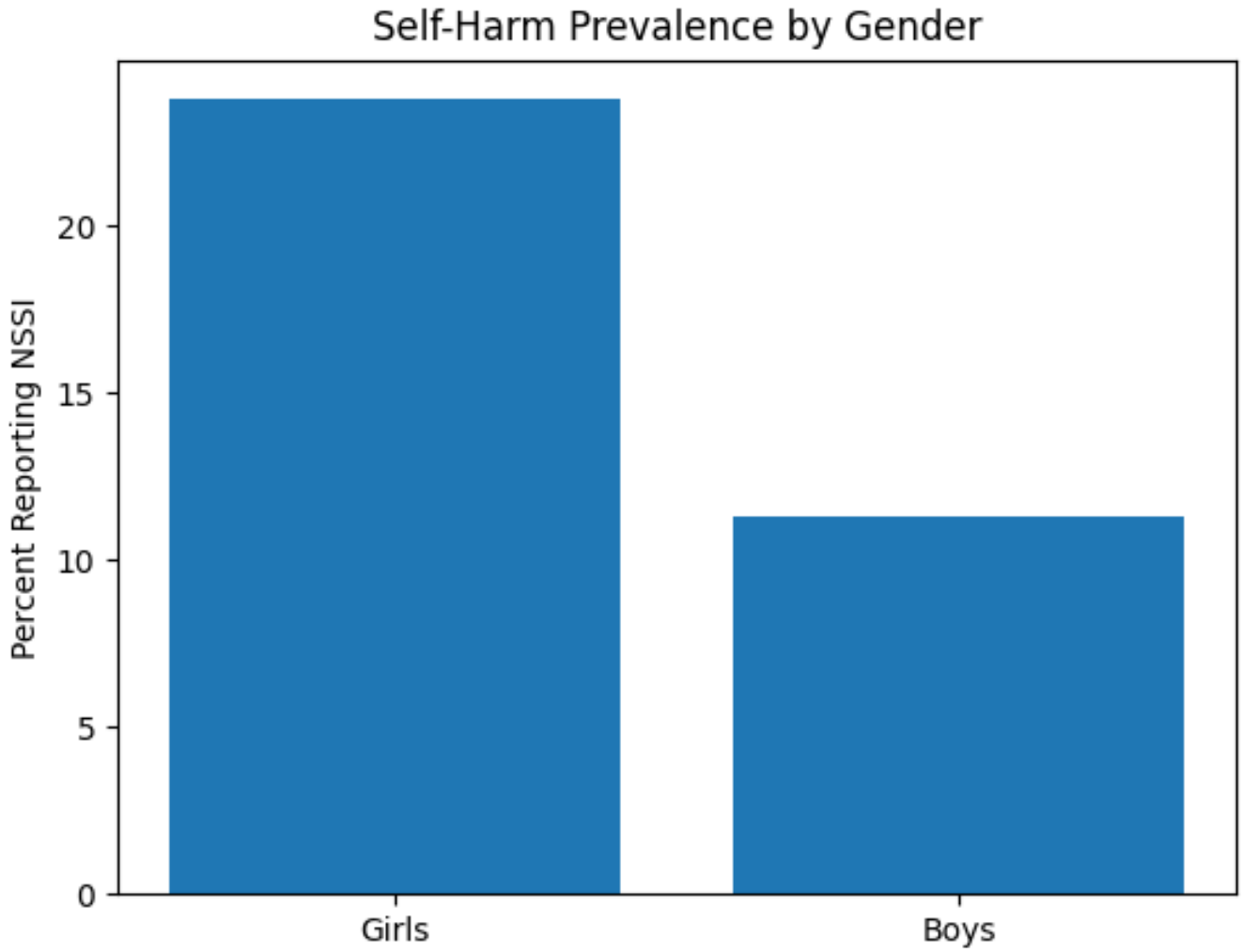
Gender Differences in Self-Harm



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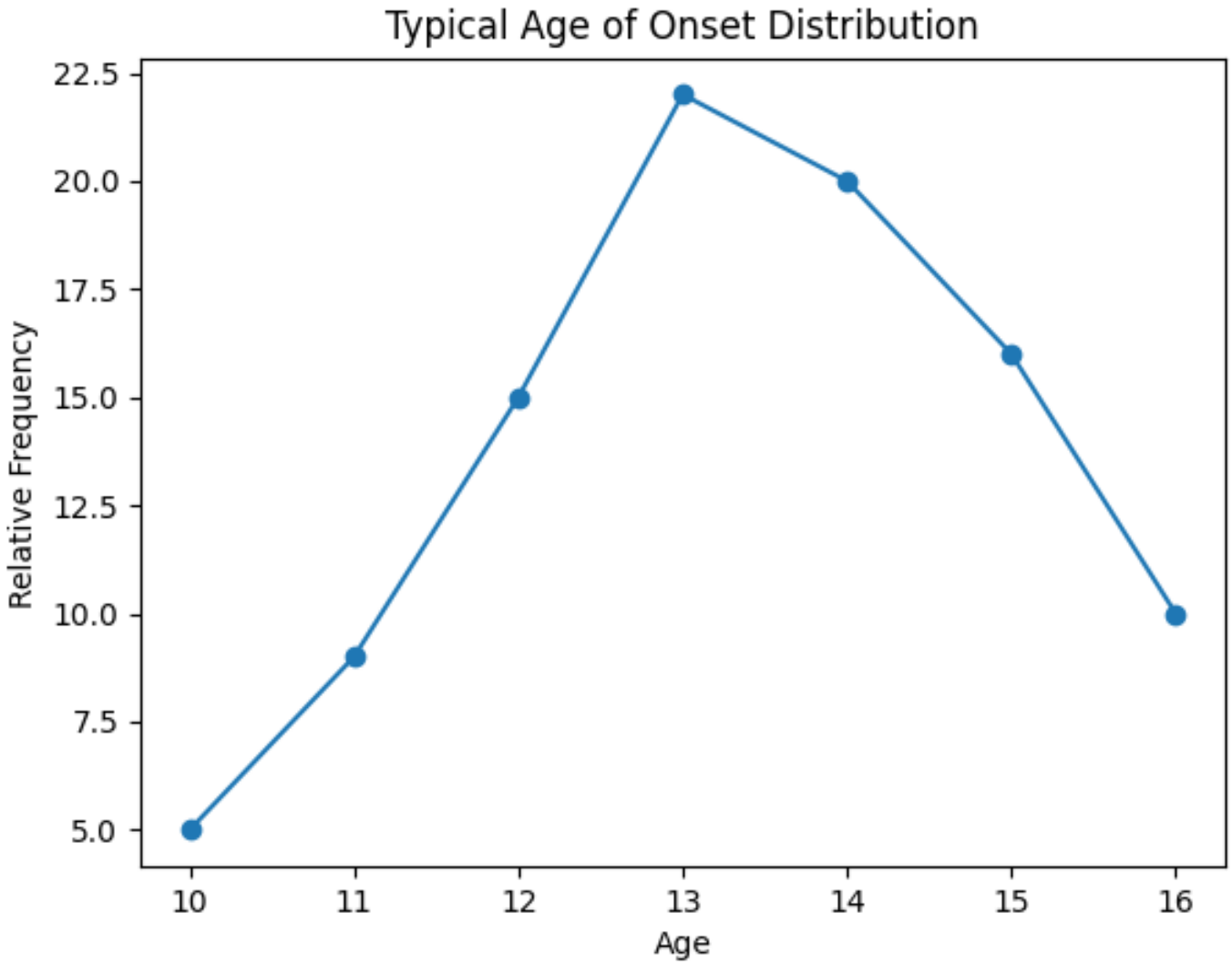
Age of Onset Distribution



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Suicide and Self Harm Relationship

- Self-harm does not always equal suicidal intent, but it increases risk.

Statistics:

- 20% of high school students report serious suicidal ideation.
- 9% report suicide attempts.

Youth who self-harm have significantly higher risk for suicide attempts later.

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Why Do Youth Self Harm

- Self-harm often functions as emotion regulation.

Common functions include:

- • Reducing overwhelming emotional distress
  - Self-punishment or shame regulation
  - Communicating internal pain
  - Relieving dissociation or numbness
  - Regaining control

Many youth report temporary emotional relief after self-injury.

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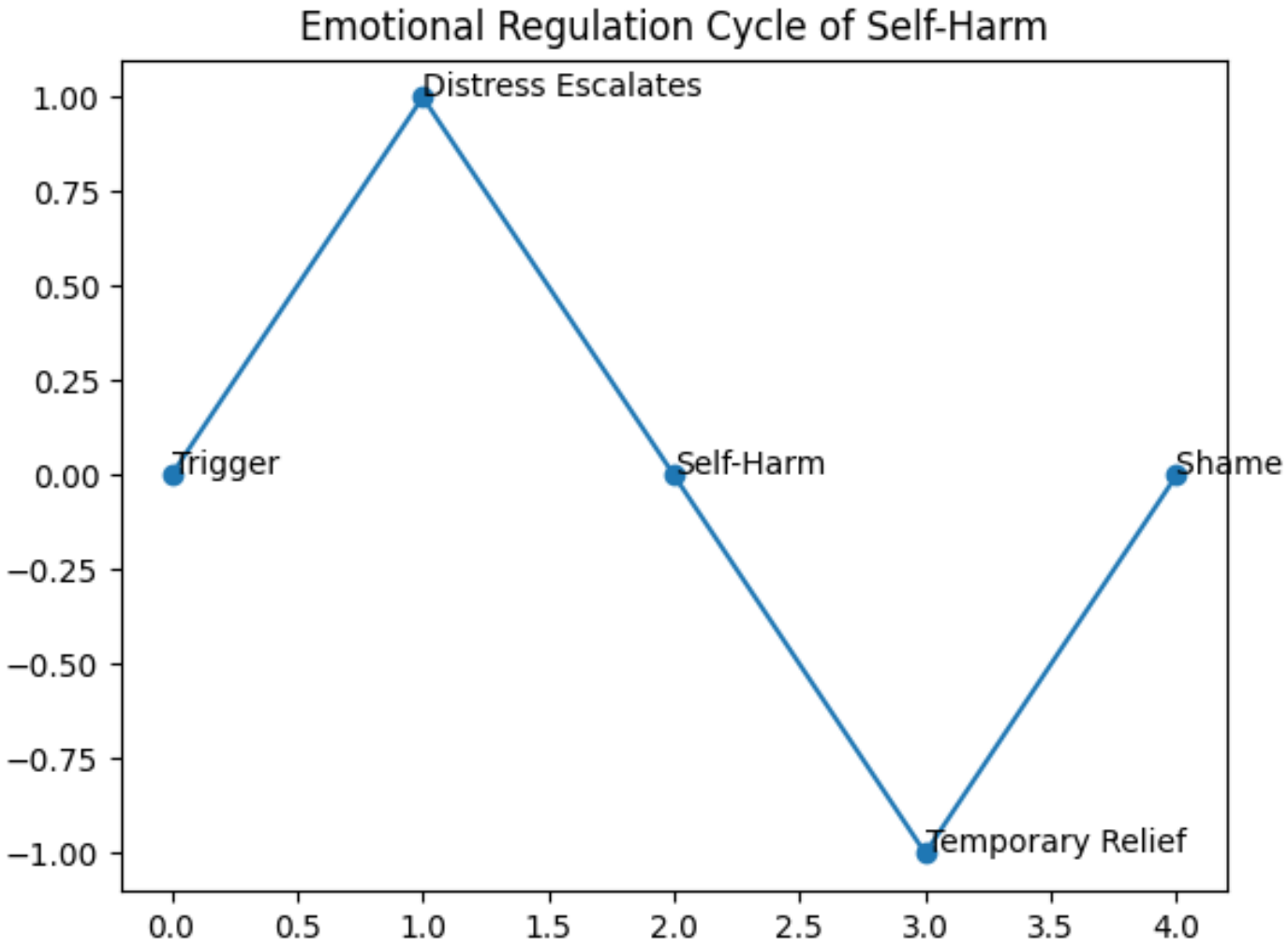
Emotional Regulation Cycle



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Neurobiology of Self-Harm

Key Brain Systems Involved

- Limbic system (amygdala)
- Prefrontal cortex
- Reward system (striatum / dopamine pathways)
- Pain and endorphin systems

Neurobiology of Self-Harm

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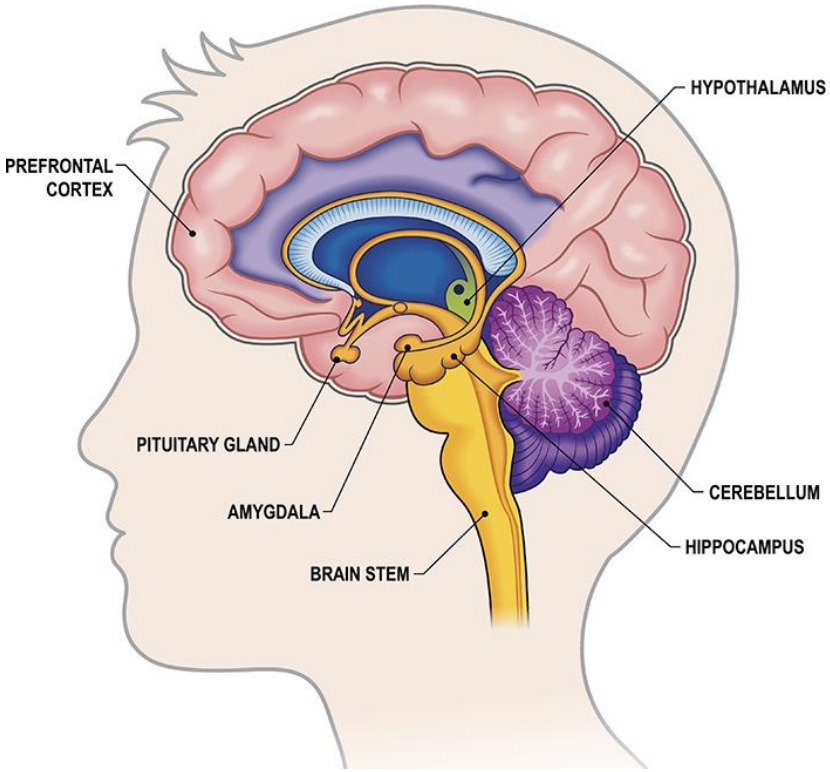
Limbic System (amygdala)

- Processes fear, threat, and emotional intensity
- Activates the fight-or-flight response
- In adolescents with emotional dysregulation, the amygdala may be hyper-reactive, causing emotions to feel overwhelming.



Youth who engage in self-harm often show heightened amygdala activation, meaning emotional distress escalates quickly.

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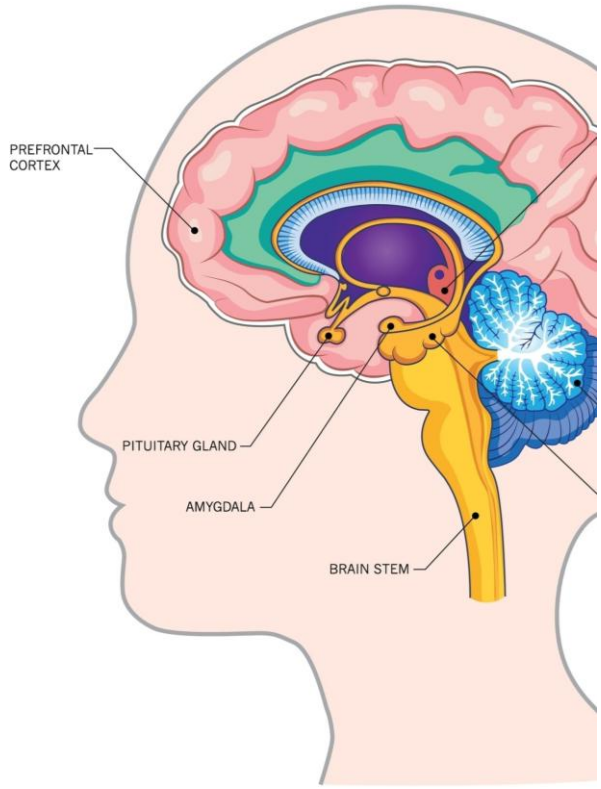

Neurobiology of Self-Harm

Prefrontal Cortex

- Emotional Regulation
- Impulse Control
- Decision Making
- Planning and Problem Solving

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Neurobiology of Self-Harm

Reward system (striatum/ dopamine pathways)

Striatum

The striatum is part of the basal ganglia and is involved in:

- Reward processing
- Motivation
- Habit formation
- Reinforcement learning

When a behavior produces relief or pleasure, the striatum helps the brain remember and repeat that behavior.

Dopamine Pathways

Dopamine is a neurotransmitter involved in:

- Reward signaling
- Motivation
- Learning from reinforcement
- Anticipation of relief or pleasure

The key pathway involved is the mesolimbic dopamine pathway, which connects:
Ventral Tegmental Area (VTA) → Nucleus Accumbens → Prefrontal Cortex

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Neurobiology of Self-Harm

Pain and endorphin systems

Endorphins: The Body's Natural Opioids

Endorphins are neurotransmitters produced by the brain and nervous system that function similarly to opioids.

They help:

- Reduce physical pain
- Produce calming or soothing sensations
- Decrease emotional distress
- Promote feelings of relief

Pain Perception Differences

Many individuals who engage in repeated self-harm show:

- Higher pain tolerance
- Reduced sensitivity to physical pain
- Altered pain processing systems

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Neurobiology and Self Harm

- Threat and reward network dysregulation
  - Neuroimaging studies show altered connectivity between striatal, frontal, and limbic regions in adolescents with NSSI.

Takeaway

Self-harm can function as a biological regulation strategy, temporarily relieving emotional distress through endorphin release and neural reward activation.

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Screening Tools

- C-SSRS (Columbia Suicide Severity Rating Scale)
- ASQ (Ask Suicide- Screening Questions)
- SITBI (Structured Interview for Self-Injurious Thoughts and Behaviors)
- ISAS (Inventory of Statements About Self-Injury)
- Self Harm Inventory (Brief Behavioral Checklist)

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Evidence-Based Treatments

- Dialectical Behavior Therapy
- Cognitive Behavioral Therapy
- Family-based interventions

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DBT and Self Harm

- Biosocial Theory
  - Biological Vulnerability
  - Invalidating Environment

- NSSI used to manage intense emotion
  - Feel something instead of nothing
  - Self punishment

Trigger → Emotional overwhelm → Lack of coping skills → Self-harm → Temporary relief → Shame → Repeat

Mindfulness, Distress Tolerance, Emotional Regulation, Interpersonal Effectiveness

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CBT and Self Harm

- Thought-Emotion-Behavior Cycle
- Interrupt the cycle

- NSSI is due to:
  - Negative core beliefs
  - Cognitive distortions
  - Poor coping strategies

Distress → Negative thoughts → Emotional pain → Self-harm → Temporary relief → Shame → More negative thoughts

Cognitive Restructuring, Behavior Alternatives, Behavioral Activation, Problem Solving, Identify Triggers, Safety Planning

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Family Intervention and Self Harm

- Address family patterns
  - Invalidation
  - High criticism or pressure
  - Avoidance of difficult emotions
  - Overprotection or panic response
- Goals of Family Intervention
  - Improve emotional communication
  - Increase emotional validation
  - Strengthen attachment and connection
  - Reduce conflict and misunderstandings
  - Support safety and recovery
- Teaching Families How to Respond to Self-Harm
- Safety and Environment Changes
- Building Emotional Skills as a Family

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Clinical Case Discussion

- 14-year-old with cutting behaviors
- Reports bullying and emotional overwhelm
- States cutting reduces emotional pain
- History of depression

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Treatment Plan Considerations

Goal 1: Reduce self-harm behaviors

Objectives:

- Patient will identify triggers for self-harm
- Patient will use 3 alternative coping skills when distressed
- Patient will reduce self-harm episodes by 50% within 8 weeks

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Treatment Plan Considerations

Goal 2: Improve emotional regulation

Objectives:

- Patient will learn DBT distress tolerance skills
- Patient will identify emotional states before escalation
- Patient will practice mindfulness skills weekly

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Treatment Plan Considerations

Goal 3: Address depressive symptoms

Objectives:

- Increase behavioral activation
- Challenge negative thinking patterns
- Improve social engagement

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Treatment Plan Considerations

Goal 4: Improve safety and support

Objectives:

- Develop a collaborative safety plan
- Parents secure sharp objects at home
- Identify three trusted adults for support

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Questions for Clinicians

- What function does the self-harm serve?
- What protective factors are present?
- What level of care is most appropriate?
- What family involvement is needed?

2026 Spring Adolescent Series

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Reading Between the Lines: Supporting Subtle Dysregulation in Neurodivergent Children

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Join our webinar presented by

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