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Assessment and Treatment of Challenging Behavior

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Overview

- My background
- Challenging Behavior vs. Severe Challenging Behavior
- Common Functions of Severe Challenging Behavior
- Assessment and Treatment Complexities
- Safety Considerations
  - Decreasing likelihood of severe challenging behavior
  - Increasing safety when behaviors do occur
- Stress During Assessment and Treatment

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My Background

My Background

- SUNY Upstate Medical University
  - Biobehavioral Health Unit

My Background

- Bancroft
  - Lindens Neurobehavioral
- University of Nebraska Medical Center
  - Munroe-Meyer Institute – Severe Behavior
- Rutgers University
  - RU-CARES – Severe Behavior Program
- University of Florida
  - UFCAN

10 years of supervision by expert, doctoral-level clinicians

My Background

- 10 years of supervision
  - Difficult to condense that into 1 hour
    - I'll be covering topics in broad strokes
  - Extensive training is needed to establish expertise

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Challenging Behavior vs. Severe Challenging Behavior

Definitions

- Challenging behavior
  - Broad definition
  - Often includes “interfering behaviors”
  - Screaming, out-of-seat, inattention, disruptions to classroom
- Severe challenging behavior
  - Significant risk of harm to self or others
  - “Can someone get hurt?”

Definitions

- Severe challenging behavior
  - Significant risk of harm to self or others
  - **Examples:**
    - Self-injurious behavior
    - Physical aggression
    - Property destruction
    - Elopement
    - Pica

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Assessing Common Functions of Severe Challenging Behavior:

Brief Overview

Functions of Behavior Overview

- Attention
- Tangible
- Escape
- Automatic

- Multiply Controlled
- Social Control/Mand Compliance
- Social Avoidance

- Idiosyncratic

Functions of Behavior Overview

- Assessing function is similar to a “behavioral diagnosis”

- Correct diagnosis → correct treatment
- Incorrect diagnosis → incorrect treatment

- Correct function → correct treatment
- Incorrect function → incorrect treatment

Functions of Behavior Overview

- Important to take the time to get it correct

Functions of Behavior Overview

- Example

- Child has limited communication
- Function = child engages in self-injury to get iPad

- Treatment → teaching them to ask for ATTENTION

- Still no way to get iPad but to engage in self-injury
- Self-injury continues

Assessment Basics

- Primary ways to assess functions:
  - Functional Behavior Assessment (FBA)
  - Functional Analysis (FA)

    technically a component of an FBA, but often it is left out

Assessment Basics

- Functional Behavior Assessment (FBA)
  - "Umbrella term"
  - Indirect assessments
    - Questionnaires
    - Interviews
  - Descriptive assessments
    - Observations (typically, no manipulations)
    - A-B-C (antecedent-behavior-consequence) data collection
    - Scatter plots

Assessment Basics

- Functional Analysis (FA)
  - Direct observation
  - Systematic manipulation of the environment across 2 or more conditions
  - Evaluates:
    - Events that “trigger” behavior
    - Events that make behavior continue to occur

Assessment Complexities

- Functional Analysis = “gold standard” (Hanley et al., 2003; Melanson & Fahmie, 2023)

- Considered the most accurate assessment

Functions of Behavior Overview

- Functional analysis
  - Assessment to identify functions
  - Consistently produces conclusive results
  - 92.3% across published research (Melanson & Fahmie, 2023)

  - Henry et al. (2021) evaluated procedural refinements to functional analysis procedures
    - Conclusive results for 20 of 20 cases across multiple sites

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Assessing Functions: Complexities

Assessment Complexities

- Functional Analysis use by behavior analysts (Oliver et al., 2015)
  - Always: 10.9%
  - Almost Always: 25.4%
  - Almost Never: 47.7%
  - Never: 15%

62.7% of practitioners rarely use "gold standard" → WHY?

Assessment Complexities

- Not an indictment!
- Barriers to using gold standard (Oliver et al., 2015)
  - 57.4% = lack of time
  - 51.8% = lack of space or materials
  - 16.8% = lack of insurance funding
  - 26.7% = lack of trained staff

Assessment Complexities

- Functional behavior assessment use by behavior analysts (Oliver et al., 2015)
- Descriptive Assessments (e.g., observations)
  - Always or Almost Always = 94%
- Indirect Assessments (e.g., questionnaires, interviews)
  - Always or Almost Always = 75%

Assessment Complexities

- Functional behavior assessments without functional analysis have questionable accuracy
- FBA only matched Functional Analysis 25% of the time (Romani et al., 2023)
  - Arndorfer et al. (1994)
  - Conroy et al. (1996)
  - Duker & Sigafoos (1998)
  - Newton & Sturmey (1991)
  - Sigafoos et al. (1993)
  - Sigafoos et al. (1994)
  - Spreat & Connelly (1996)
  - Sturmey (1994)
  - Zarcone et al. (1991)
  - Paclawskyj et al. (2001)
  - Hall (2005)
  - Lerman & Iwata (1993)
  - Mace & Lalli (1991)
  - Pence et al. (2009)
  - Piazza et al. (2003)
  - St. Peter et al. (2005)
  - Thompson & Iwata (2007)

Assessment Complexities

- 62.7% “almost never” use gold standard

- Not really an indictment:
  - Only 26.5% of respondents said “severe behavior” as primary practice area (Brown et al., 2023)
  - **Specialized area of practice**

Assessment Complexities

- Scope of competence (Brodhead et al., 2022)
  - "Topic of scope of competence itself has been a polarizing and controversial in behavior analysis"

Assessment Complexities

- “Competence is determined by their previous experiences in demonstrating successful behavior change”

- “Even if you received the best coursework…conducted your field experience…and were supervised by a highly skilled supervisor…you can only say you are competent…if you have independently and successfully produced behavior change”

Assessment Complexities

- Attending this presentation is not going to produce competence per se
- Attending a two-day workshop is insufficient

Safety!

- Wiskichen et al. (2017)
- Deochand et al. (2020)
- Frank-Crawford et al. (2024)
- Dozier et al. (2022)
- Irwin Helvey et al. (2024)
- Brown et al. (2025)
- Schroeder et al. (2025)

Assessment Complexities

- **Severe** challenging behavior needs care from practitioners with appropriate:
  - Expertise
  - Resources
- Helps ensure accurate assessment and effective treatment
- Need to refer to specialized services

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Assessment Framework

Assessment Framework

- Henry et al. (2021)
  - Phased approach
  - Refined Vollmer et al. (1995)
  - Conclusive for 20 of 20 consecutive cases

Assessment Framework

- Phase 0
  - Indirect assessments
    - Scales
      - Wiggins & Roscoe (2020) → informs escape condition
    - Interviews → talk to people!
      - Caregivers
      - Teachers
    - Document reviews
      - IEP

Assessment Framework

- Phase 0
  - Descriptive assessments
    - Preference assessments
      - Informs tangible/attention/toy play conditions
      - Severe behavior during preference assessments → use those data!
    - Structured caregiver/teacher observations
      - Test various establishing operations
      - Informs all conditions

Assessment Framework

- Phase 0
  - Need to inform the FA!!!
  - "Standard FA is too prescriptive, not individualized, and/or it is not ecologically valid"

Assessment Framework

- Phase 0
  - Need to inform the FA!!!
  - Uninformed FA is a bad FA

Assessment Framework

- Phase 1
  - Extended low interaction condition
  - Screen for automatic reinforcement
    - Querim et al. (2013)
    - Refined by Bell & Fahmie (2018)

Assessment Framework

- Phase 2
  - Brief FA
  - "FAs require too much time"

  - Saini et al. (2020)
    - Multielement equally efficient per session per function assessed
    - Trial based FA equally efficient by total time
  - TBFA can be built into daily activities - minimal extra time…

Assessment Framework

- Phase 2
  - Brief FA
  - “FAs require to much time”
  - It is worth the time!
    - Informs the best treatment
    - Saves time on the back end
      - More rapid treatment effects
      - Fewer course corrections

Assessment Framework

- Phase 3
  - Multielement FA
  - Informed by previous phases
  - Use structured criteria for ongoing visual-inspection (Saini et al., 2018)
  - Make modifications!
    - Do NOT make changes too quickly
    - Consider extending session durations

Assessment Framework

- Phase 4
  - Extended low interaction
  - Replication of Phase 1 → demonstrates control
  - Necessary in clinical practice?
  - Henry et al. (2020) → Phase 4 always matched Phase 1
  - (I don't usually do this phase)

Assessment Framework

- Phase 5
  - Alternative design strategies
    - Pairwise
    - Reversal

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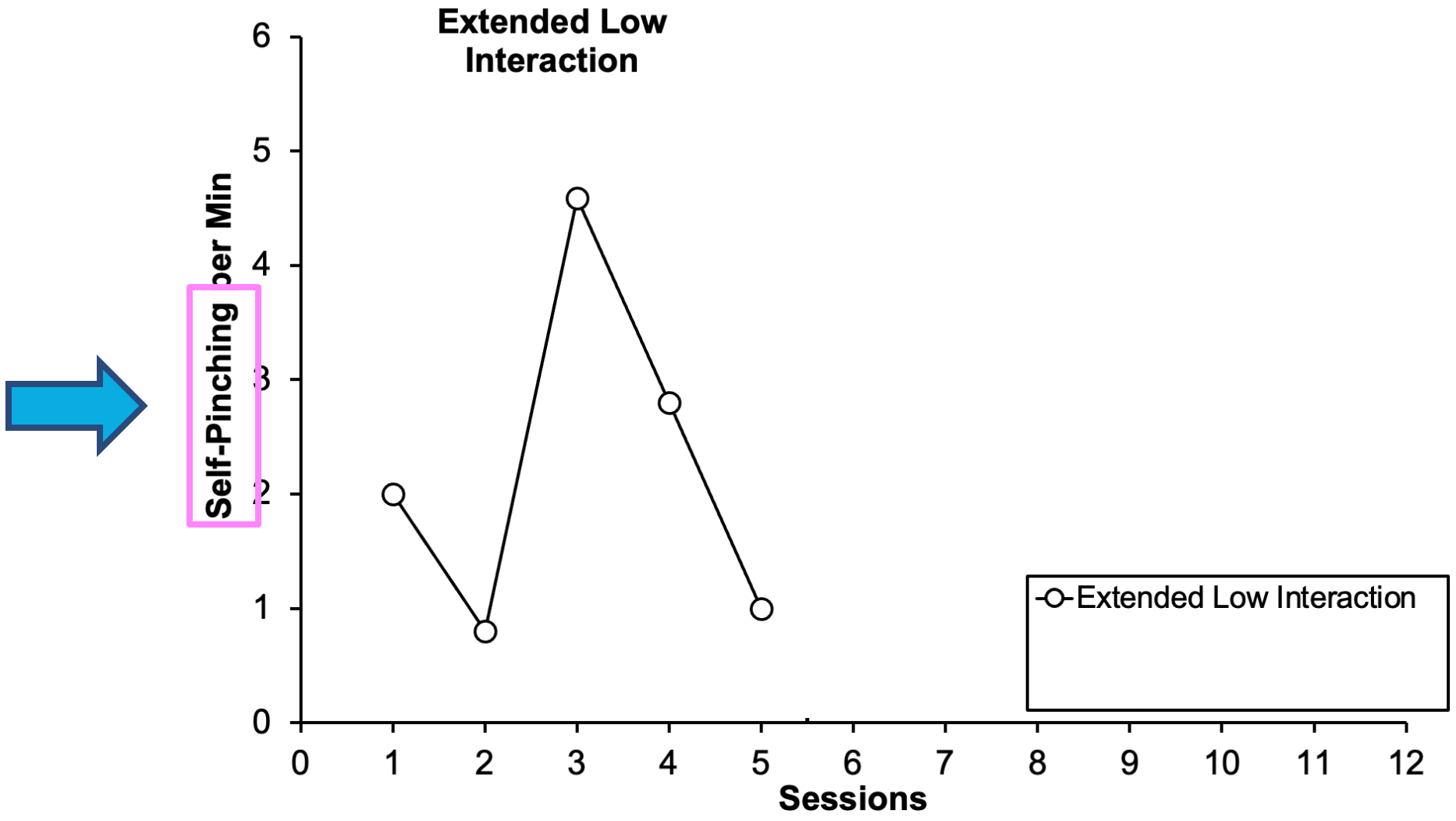
Assessment Complexity: Concrete Example

Patient from BBHU

- Self-injurious behavior
  - Head to hand hitting
  - Self-biting
  - Self-scratching
  - Self-pinching
- Aggression
  - Hitting
  - Biting
  - Scratching (primarily faces)
  - Eye-gauging

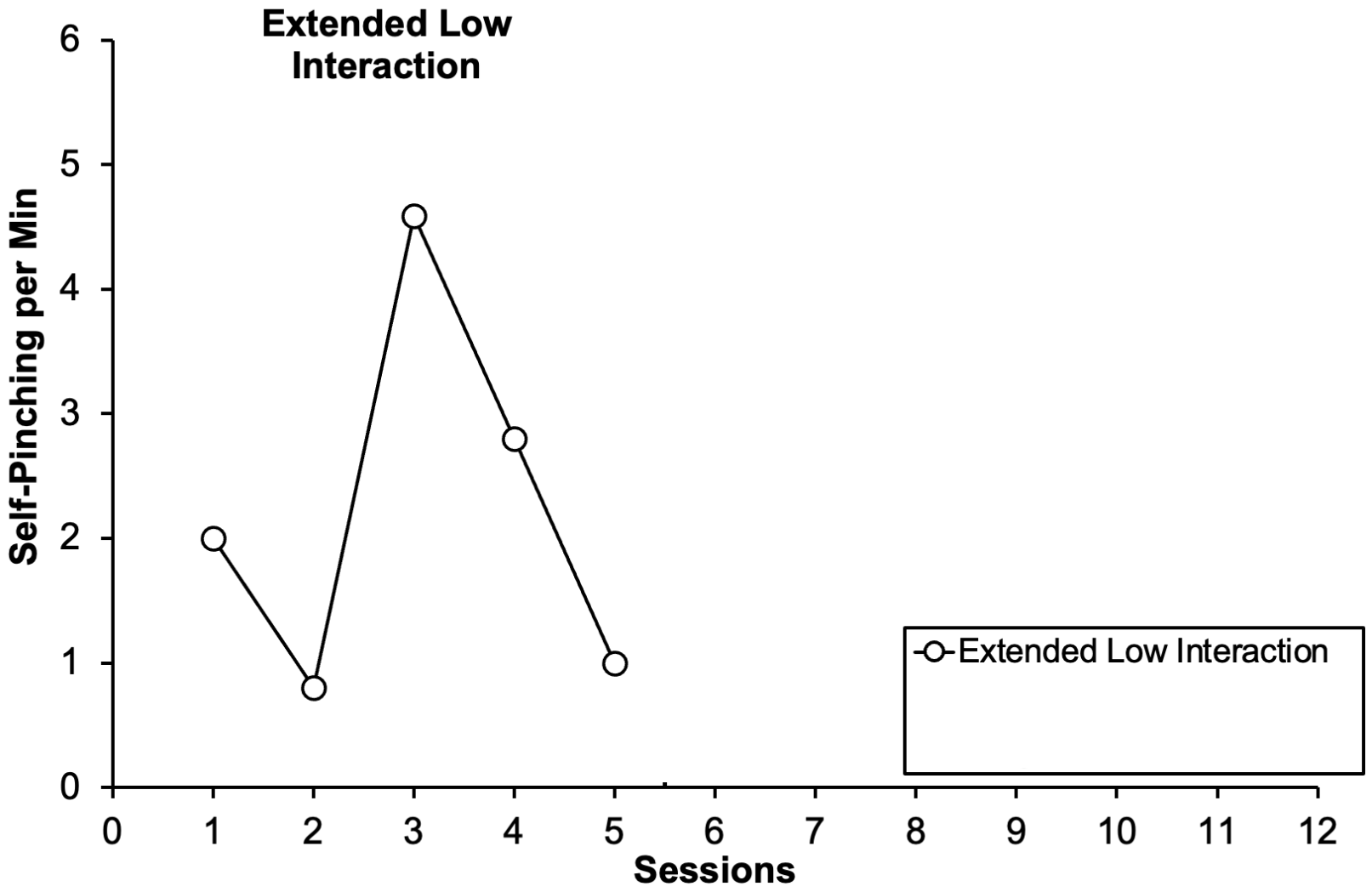
Patient from BBHU

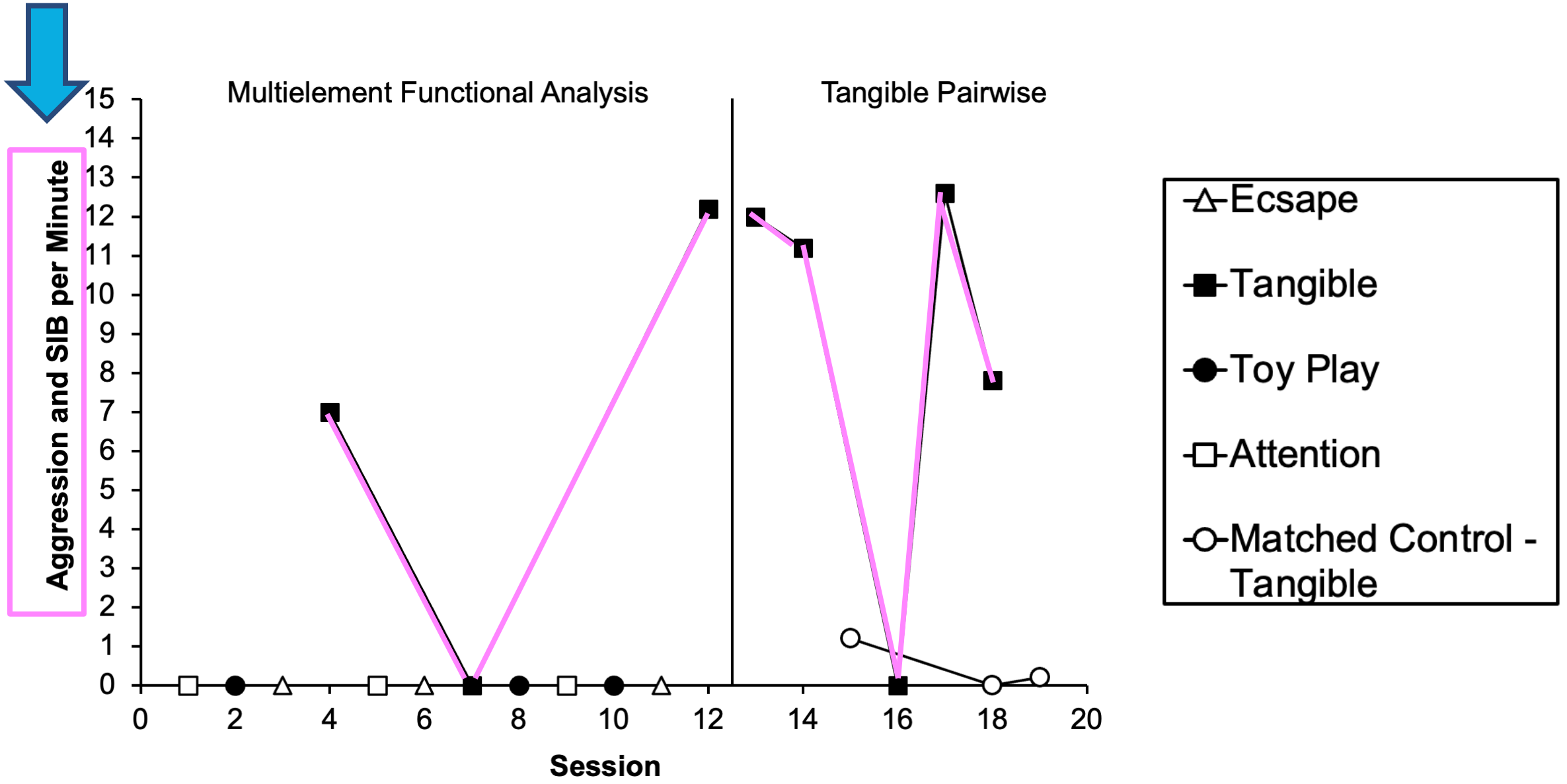
- Functional analysis (FA)
  - Include test of “automatic reinforcement”
    - Only 52.8% of published FAs include this (Melanson & Fahmie, 2023)
  - Collecting data on separate topographies during this test (Bell & Fahmie, 2018)
    - For example, different data for self-hitting and self-pinching


Extended Low Interaction
Self-Pinching per Min
0
1
2
3
4
5
6
0
1
2
3
4
5
6
7
8
9
10
11
12
Sessions
Extended Low Interaction

Patient from BBHU

- Conclude “automatic function” for self-pinching
- Do not conclude automatic function for other topographies
- Change remaining FA procedures (Bell & Fahmie, 2018)
  - Need to evaluate other behavior differently than self-pinching
- Begin testing whether environmental variables affect other behaviors


Extended Low Interaction
Self-Pinching per Min
0
1
2
3
4
5
6
0
1
2
3
4
5
6
7
8
9
10
11
12
Sessions
Extended Low Interaction


Multielement Functional Analysis
Tangible Pairwise
Aggression and SIB per Minute
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0
2
4
6
8
10
12
14
16
18
20
Session
Ecsape
Tangible
Toy Play
Attention
Matched Control - Tangible

Patient from BBHU

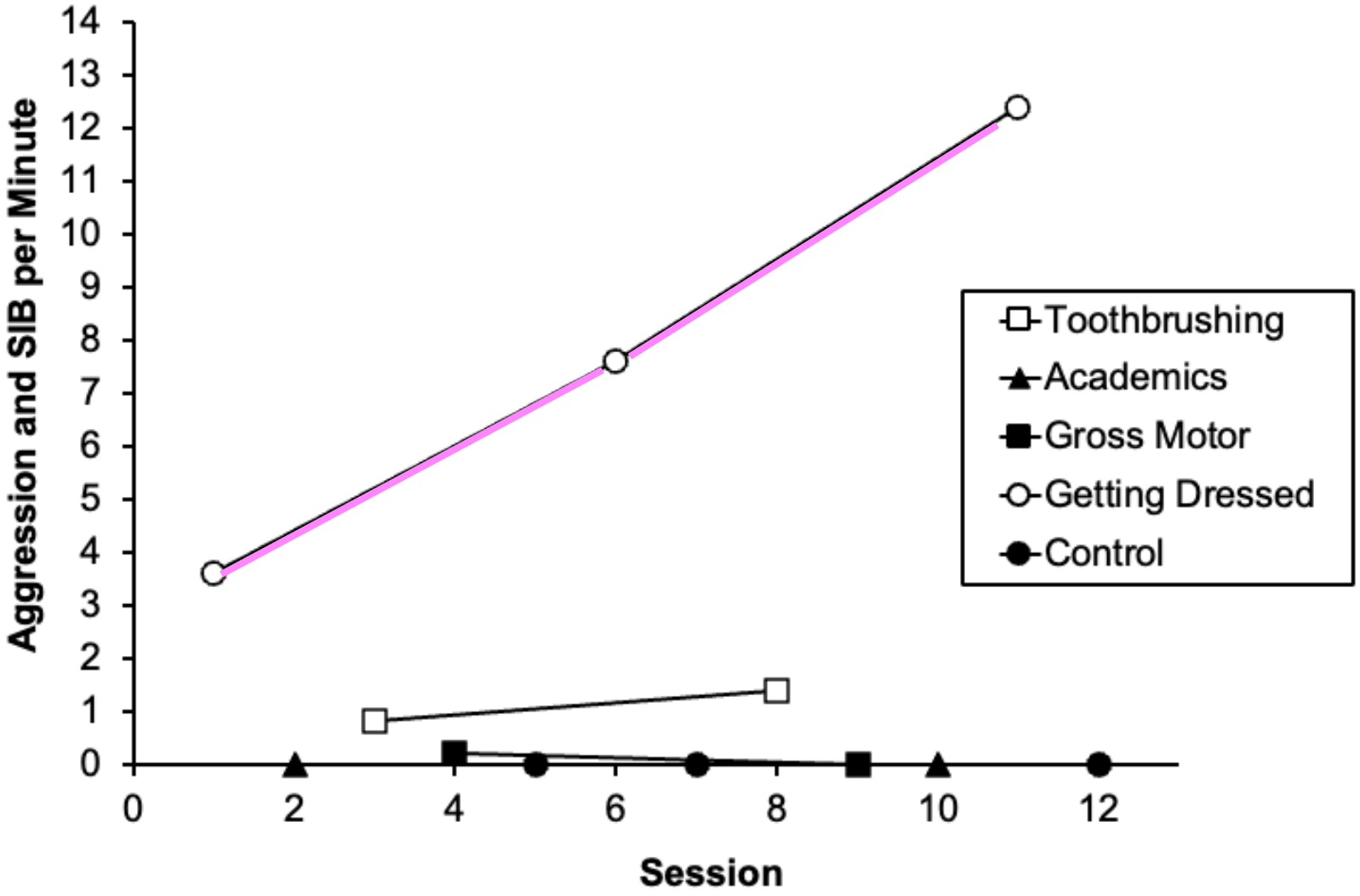
- 52.8% of published FAs do not include test for automatic reinforcement

- Likely to fail to detect this because they
- Would NOT have modified procedures
- Would have had inconclusive results

Patient from BBHU

- Conclusions?
- Tangible function

Demand Assessment



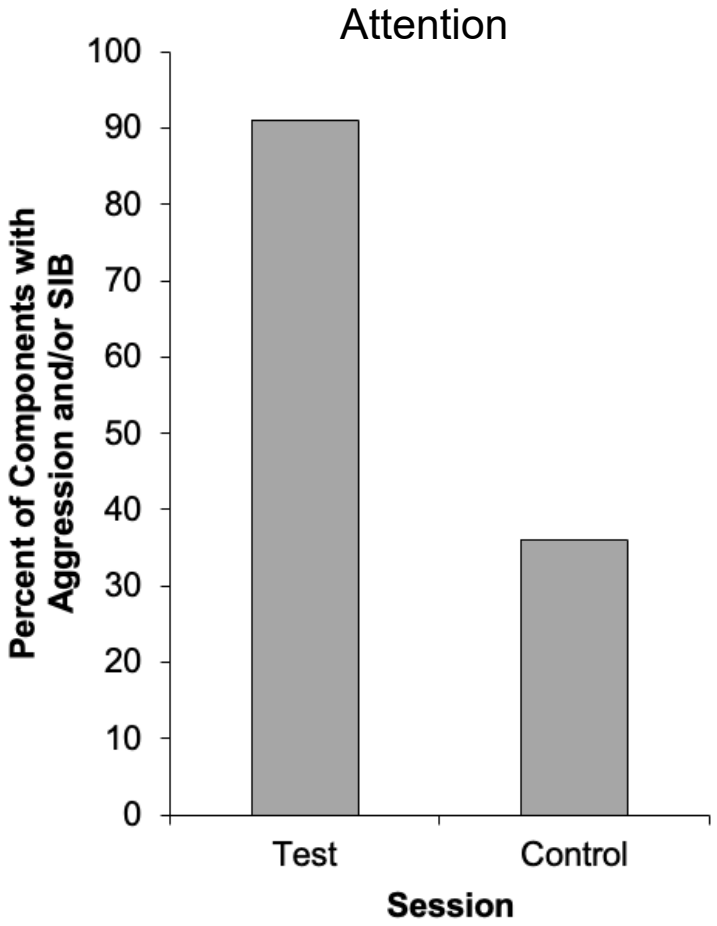
Patient from BBHU

- Conclusions?
- Tangible function
- Escape function
  - Prior condition did not detect because the reports of what was most likely to produce challenging behavior were incorrect
  - Indirect assessment are often unreliable

Patient from BBHU

- Move on to treatment for tangible and escape functions
  - Functional communication training (FCT)
- Assessment can continue while treatment is evaluated for other functions!
  - TBFA (attention) between treatment sessions

Trial-Based FA



Patient from BBHU

- Conclusions?
- Tangible function
- Escape function
- Attention function

Assessment Complexity

- Assessment process is complex
- Assessment can continue during treatment
- Expertise in this specialized area is necessary

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Next Section Selection

- Safety Considerations
- Assessment Example 1
- Treatment Example 1
- Treatment Example 2
- Assessing Stress
- Conclusions

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Treatment Complexity: Concrete Example 1

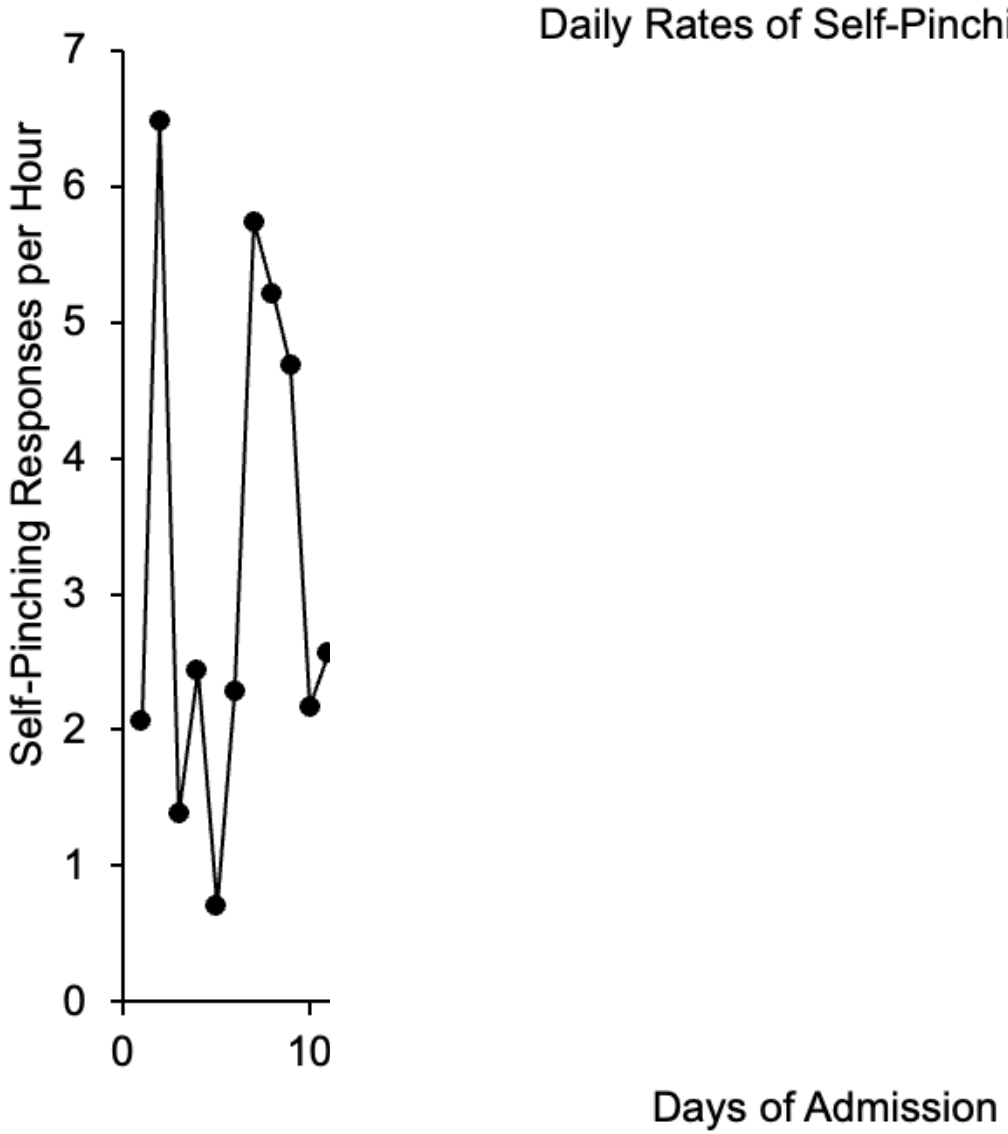
Same Patient from BBHU

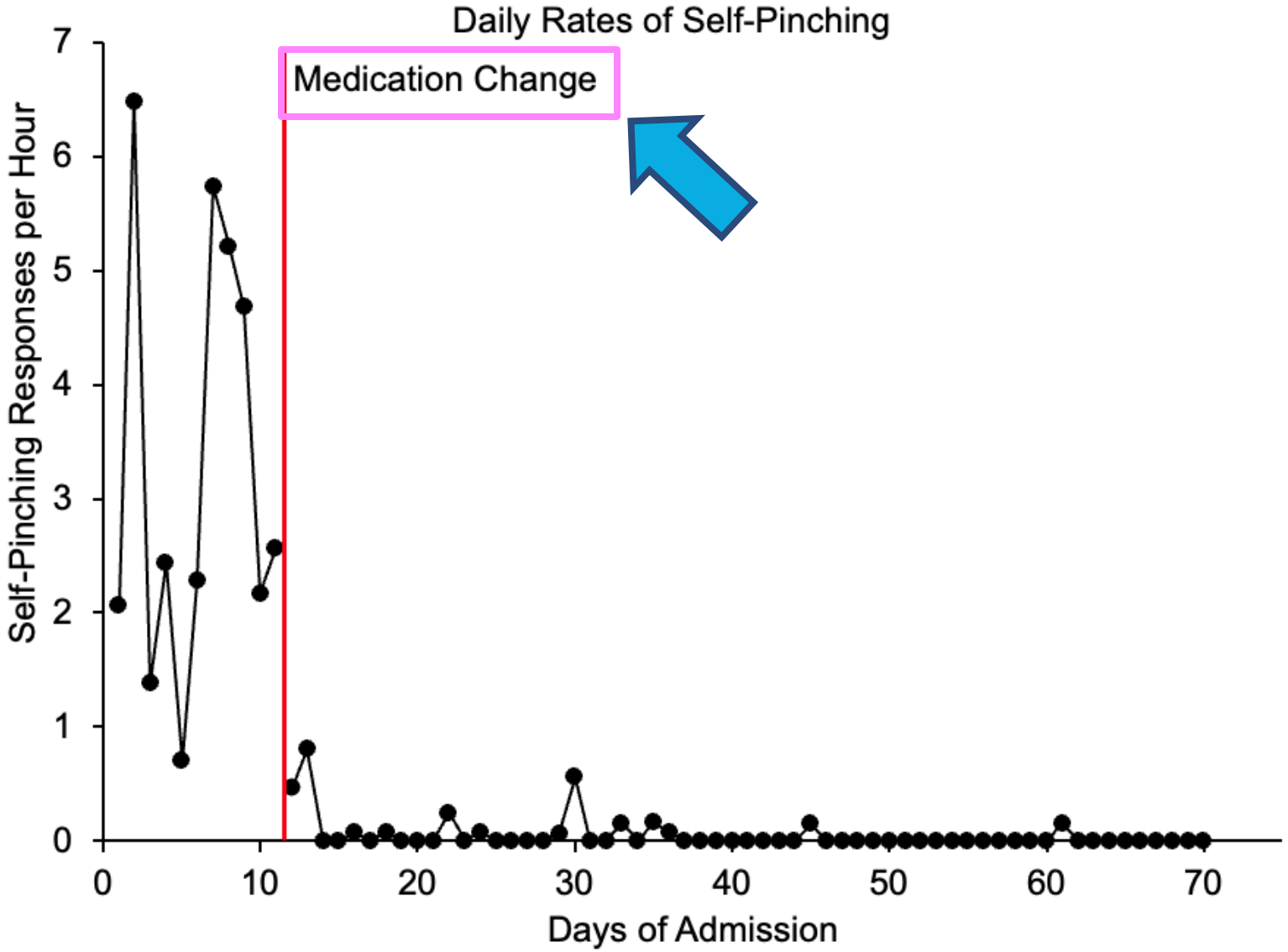
- Pinching – automatic function
- Aggression and all other SIB
  - Tangible
  - Escape
  - Attention

Patient from BBHU

- Pinching – automatic function

- Common treatments for automatic function:
  - Competing reinforcement (NCR, competing item, enriched environment, etc.)
  - Stimulus control
  - Differential reinforcement (“omission training,” incompatible responses)


Daily Rates of Self-Pinching
Self-Pinching Responses per Hour
0
1
2
3
4
5
6
7
0
10
Days of Admission

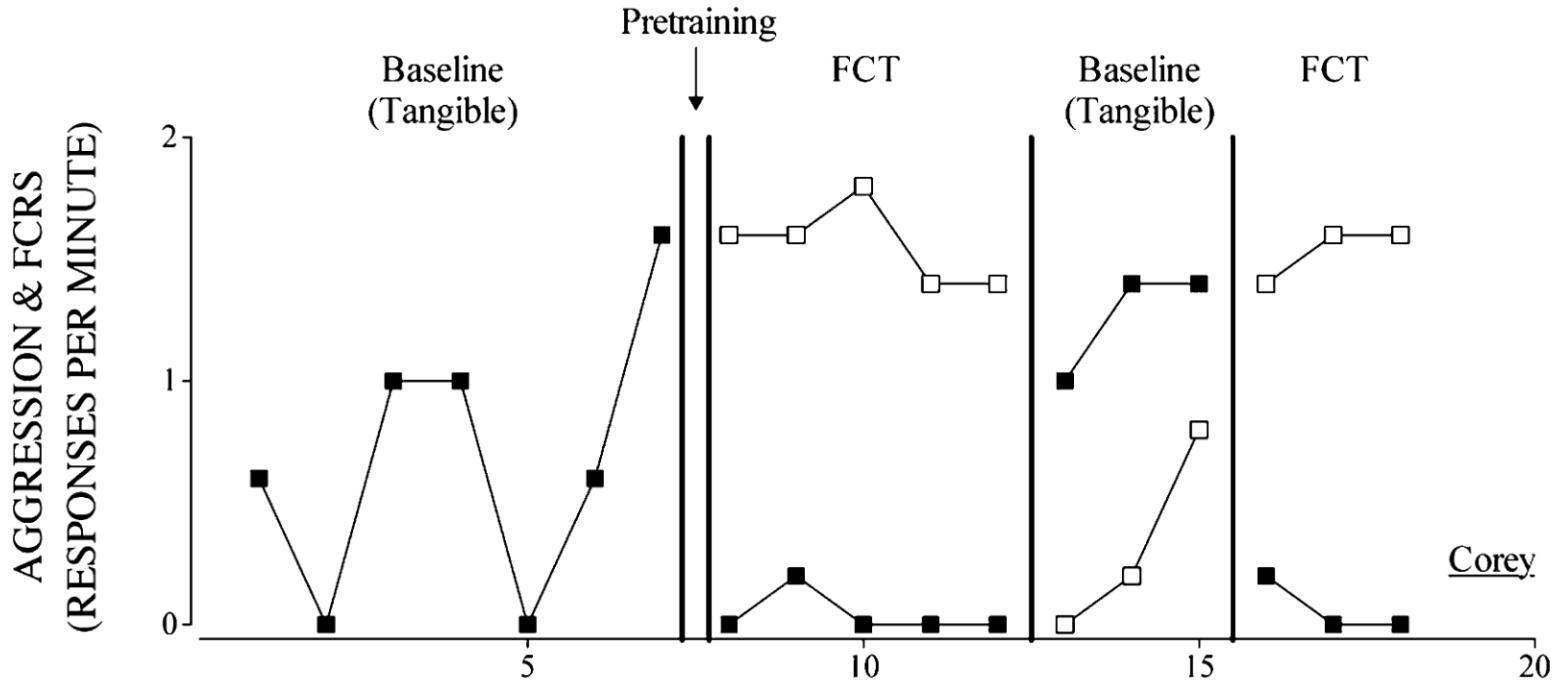

Daily Rates of Self-Pinching
Medication Change
Self-Pinching Responses per Hour
0
1
2
3
4
5
6
7
0
10
20
30
40
50
60
70
Days of Admission

Patient from BBHU

- Biological variables may be relevant!
- Interdisciplinary approach often needed

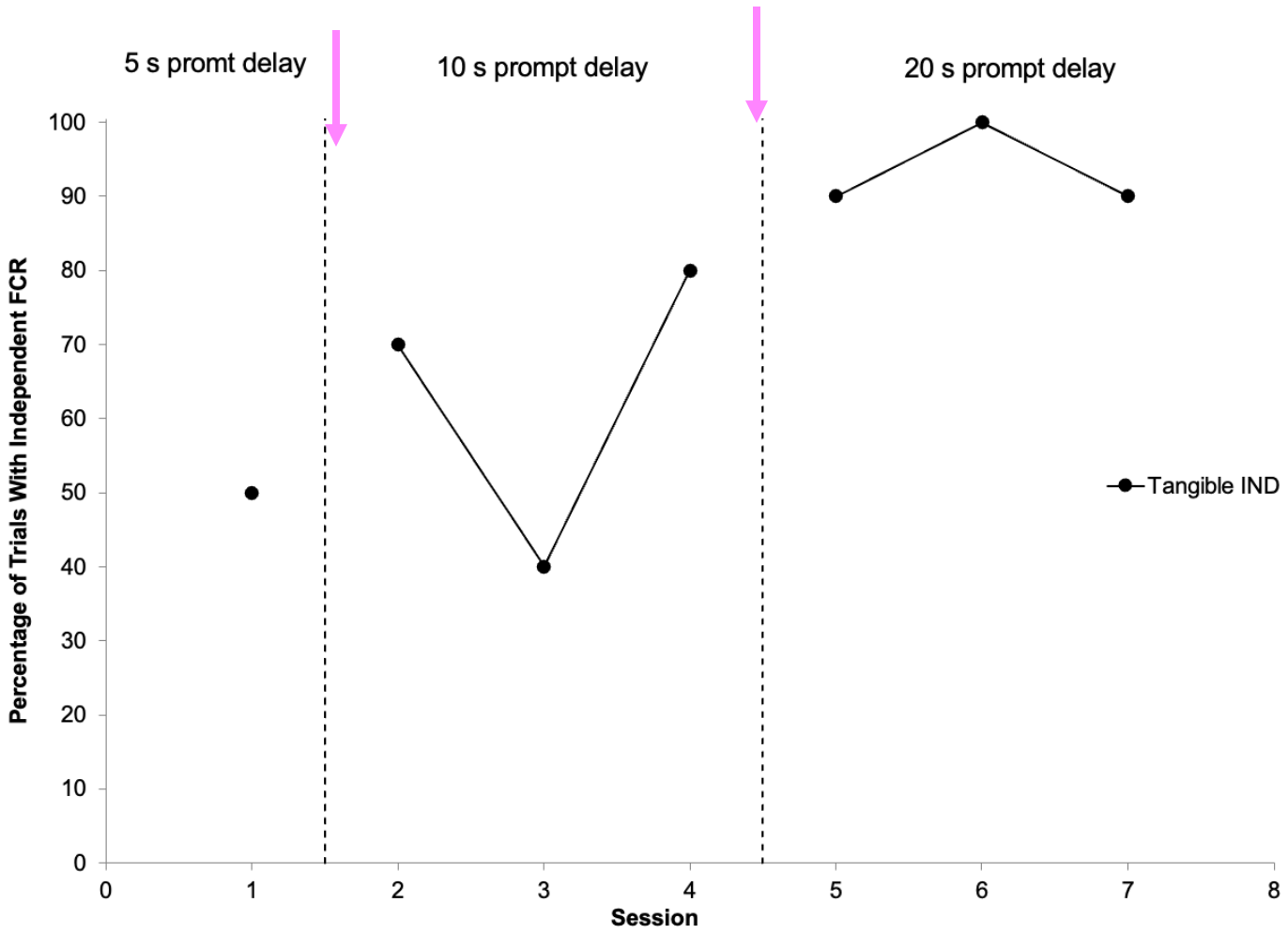
Patient from BBHU

- Social functions – Functional Communication Training

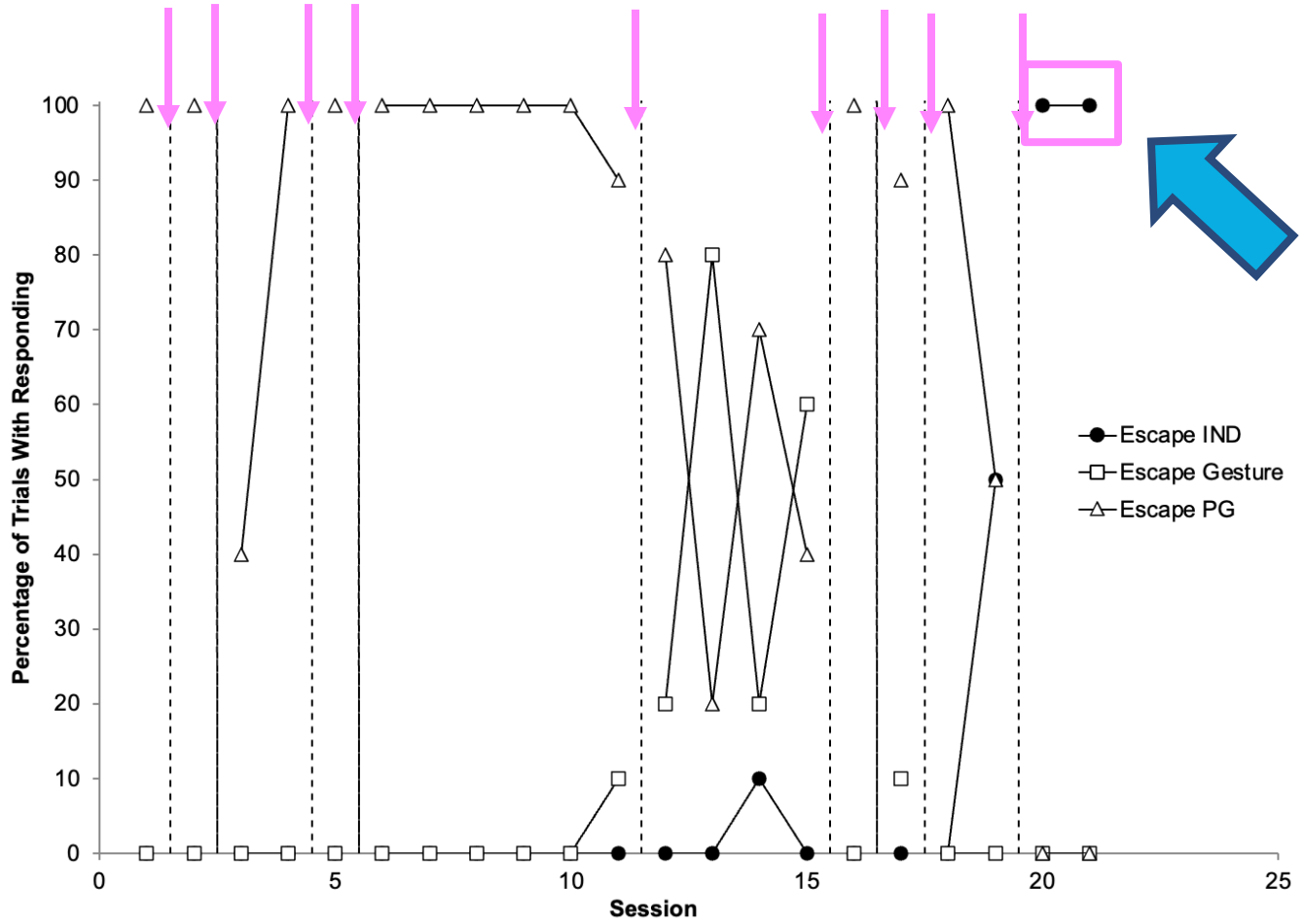


Fisher et al. (2015)

Patient from BBHU



Patient from BBHU



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Next Section Selection

- Safety Considerations
- Assessment Example 1
- Treatment Example 1
- Treatment Example 2
- Assessing Stress
- Conclusions

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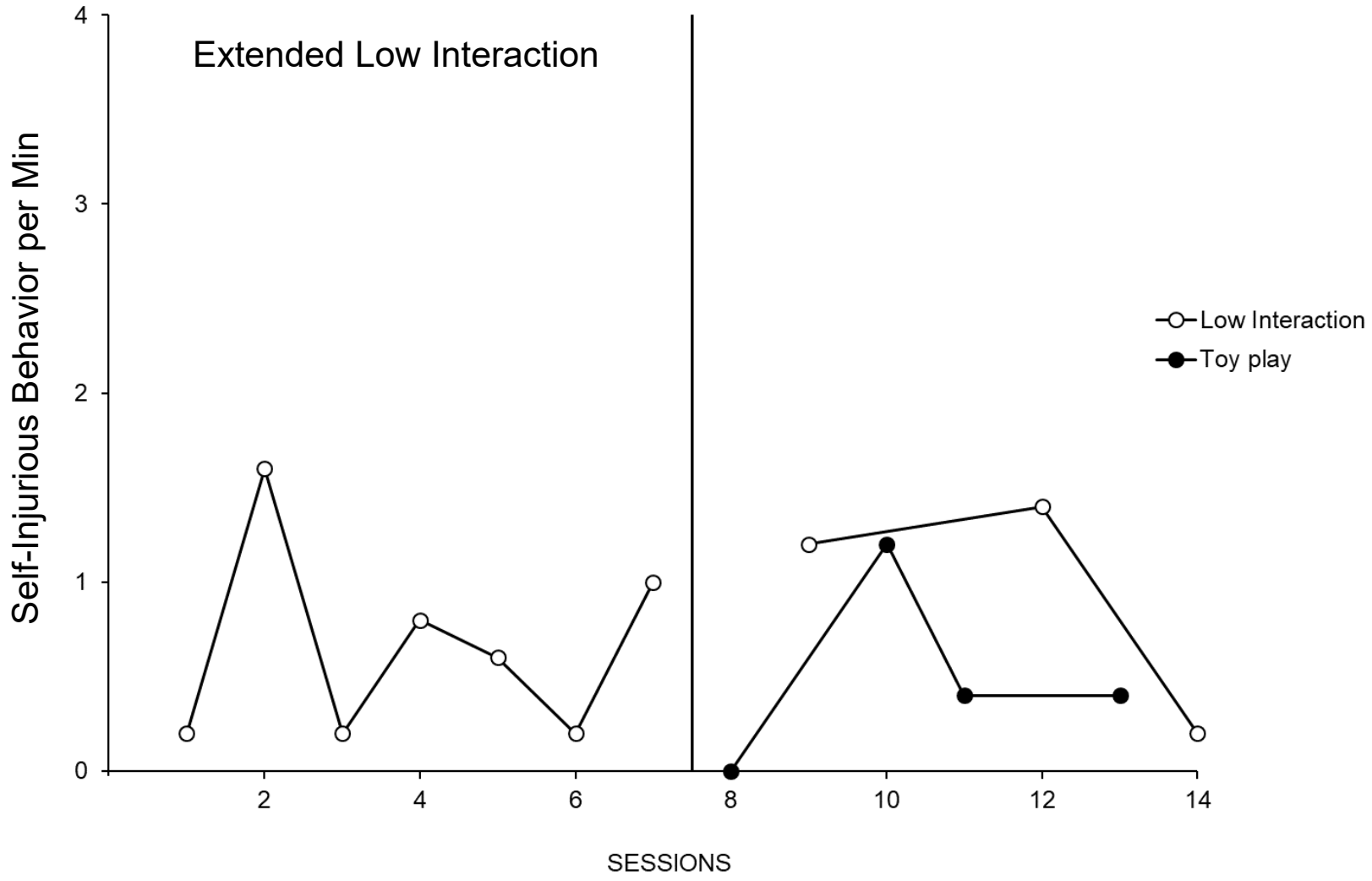
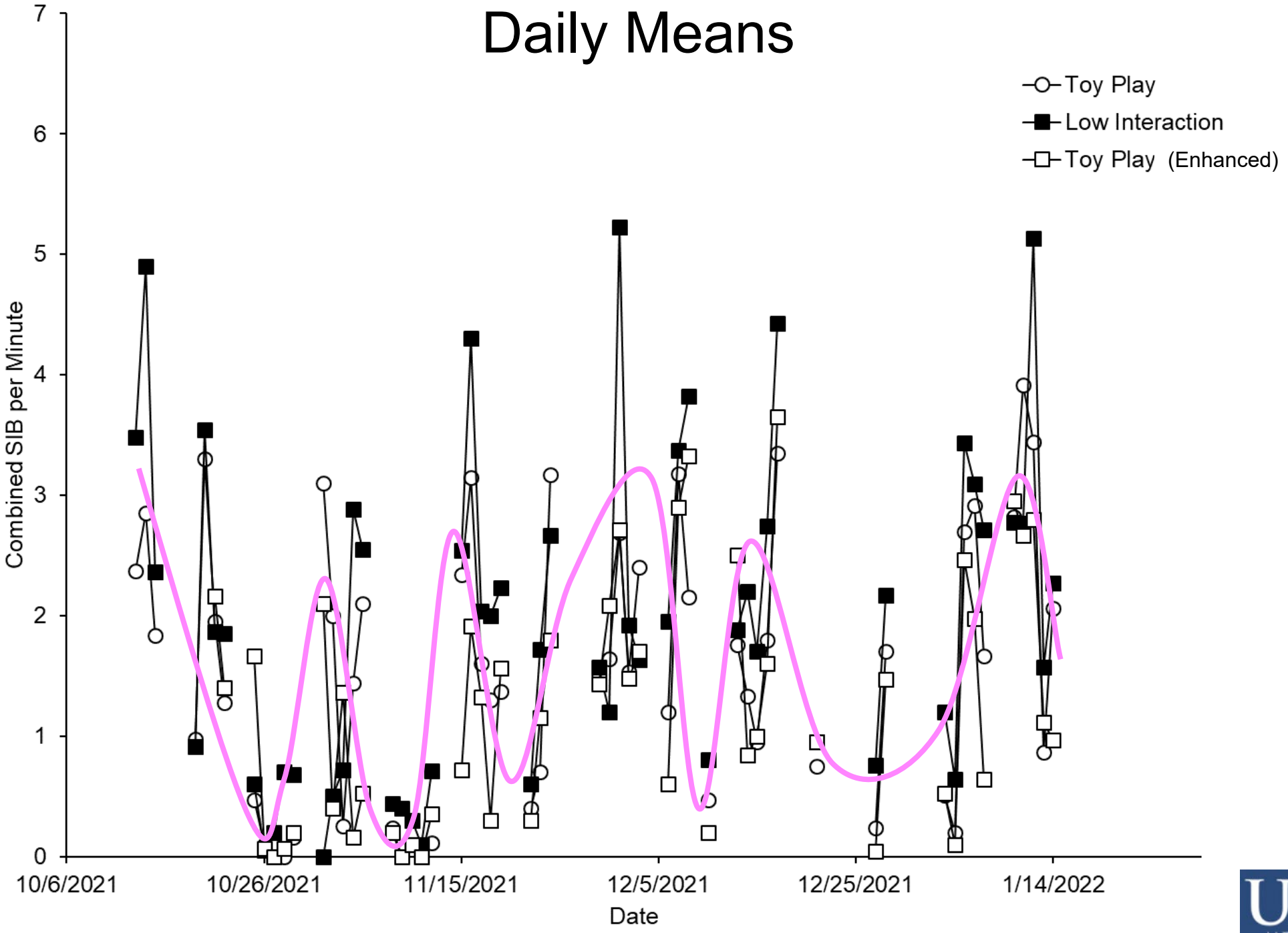
Treatment Complexity: Concrete Example 2

Patient at Previous Location

- Primary referral concern
- Self-injurious behavior
  - Hand-to-head hitting
    - Cauliflower ear
  - Hand-to-body hitting
    - Callus
  - Self-biting
    - Callus


Extended Low Interaction
Self-Injurious Behavior per Min
0
1
2
3
4
2
4
6
8
10
12
14
SESSIONS
Low Interaction
Toy play

Daily Means



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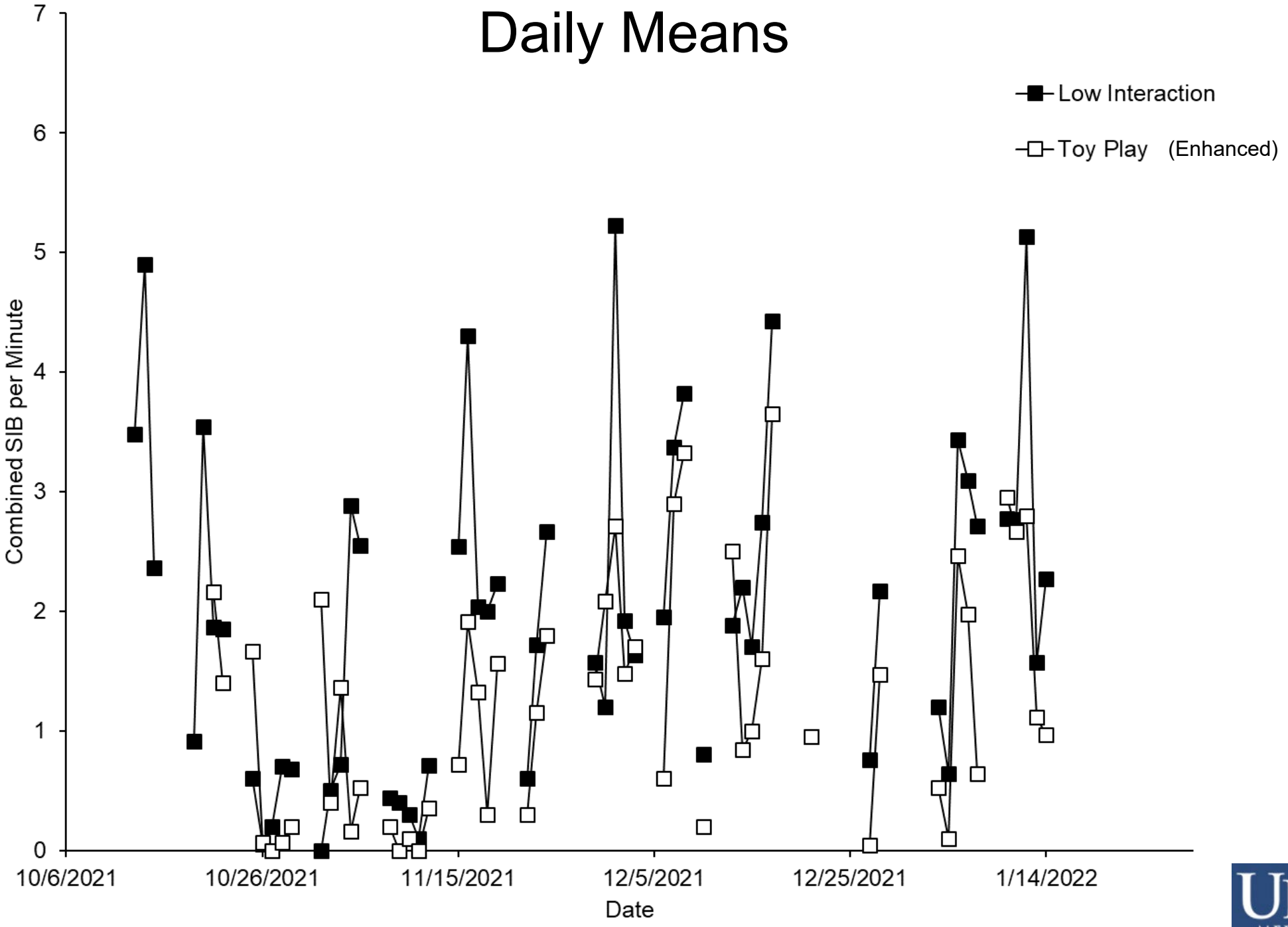
Daily Means



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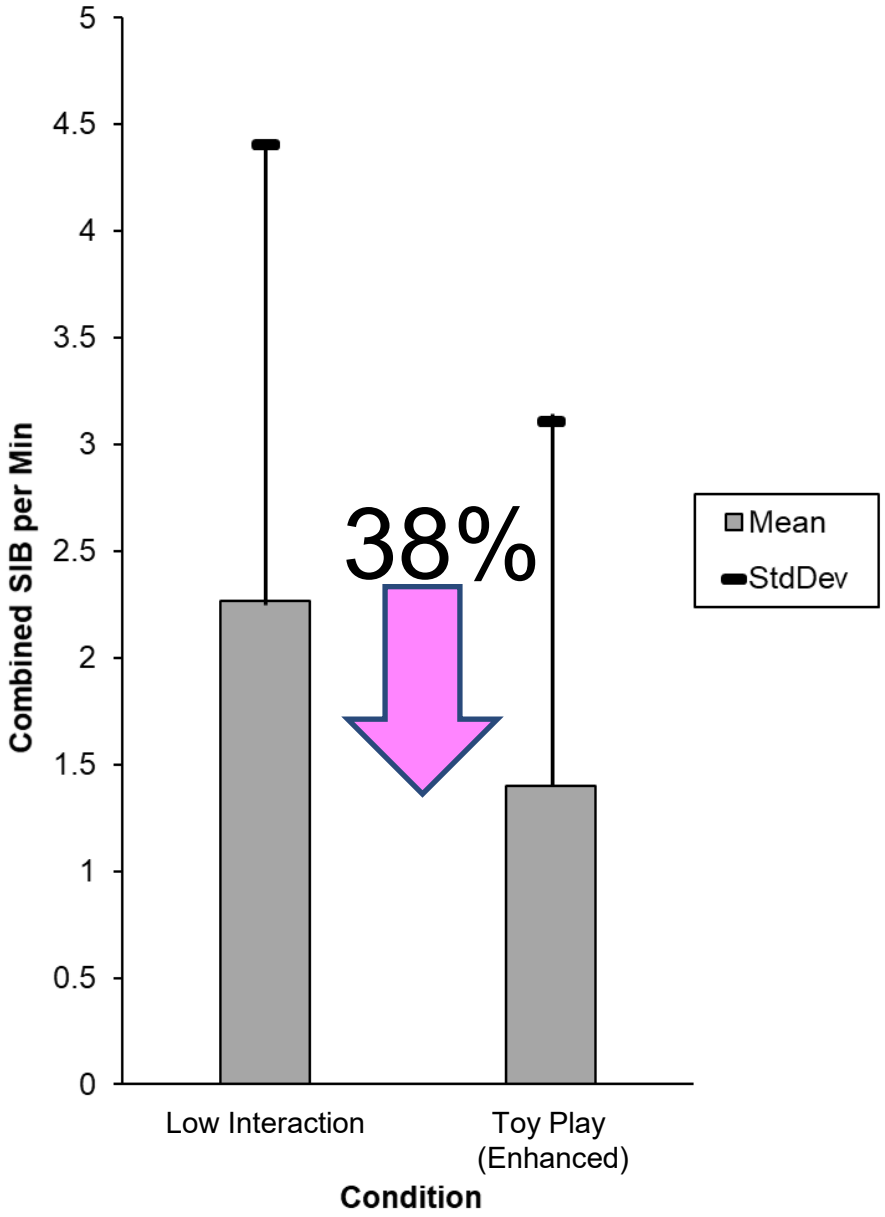
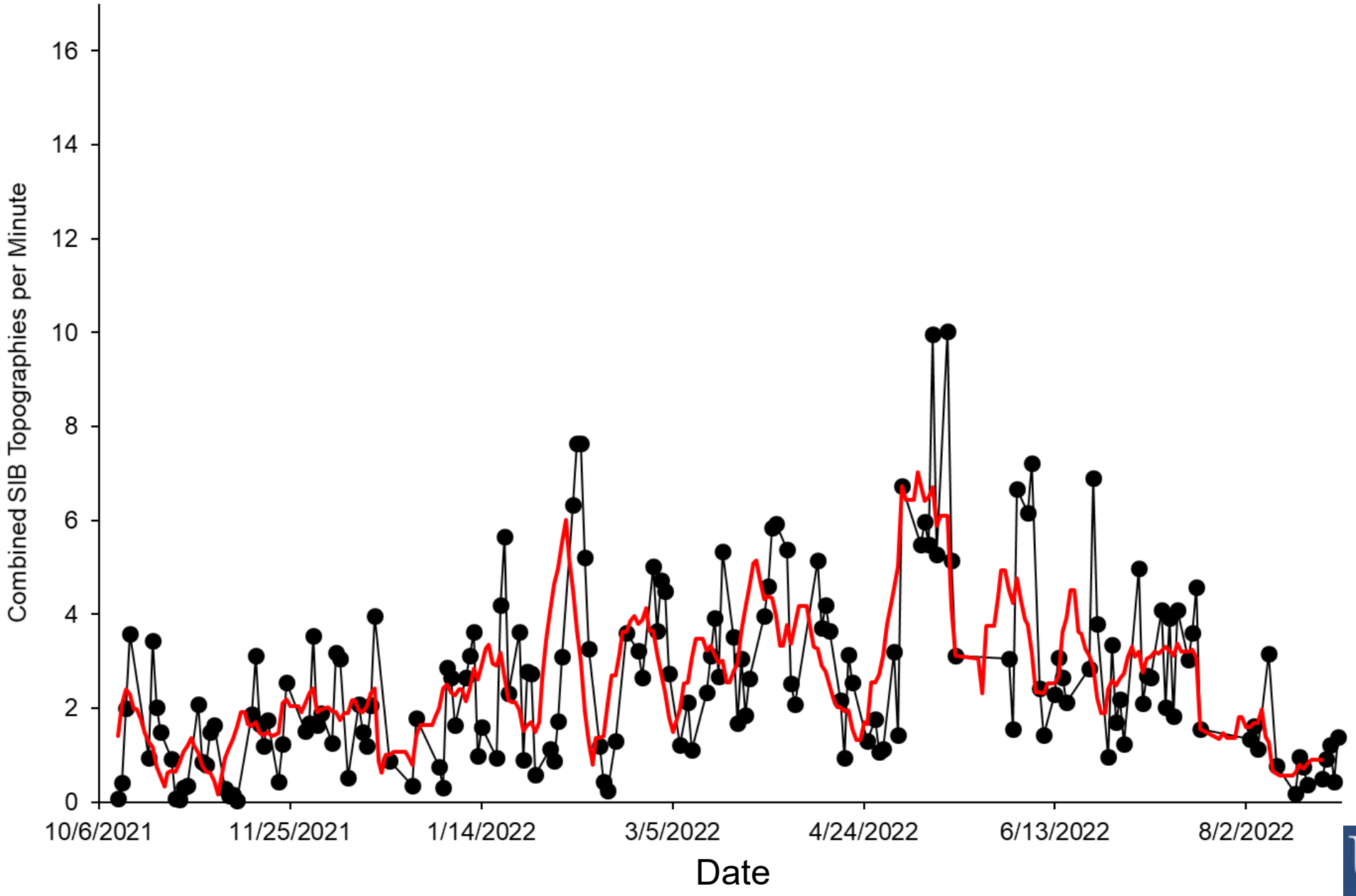

5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Combined SIB per Min
38%
Mean
StdDev
Low Interaction
Toy Play
(Enhanced)
Condition

Patient at Previous Location

- Relative success is important
- Challenging behavior may still be occurring, but occurring less
- Overall decreased likelihood of harm to self and others
- Can allow healing to occur

Daily Means



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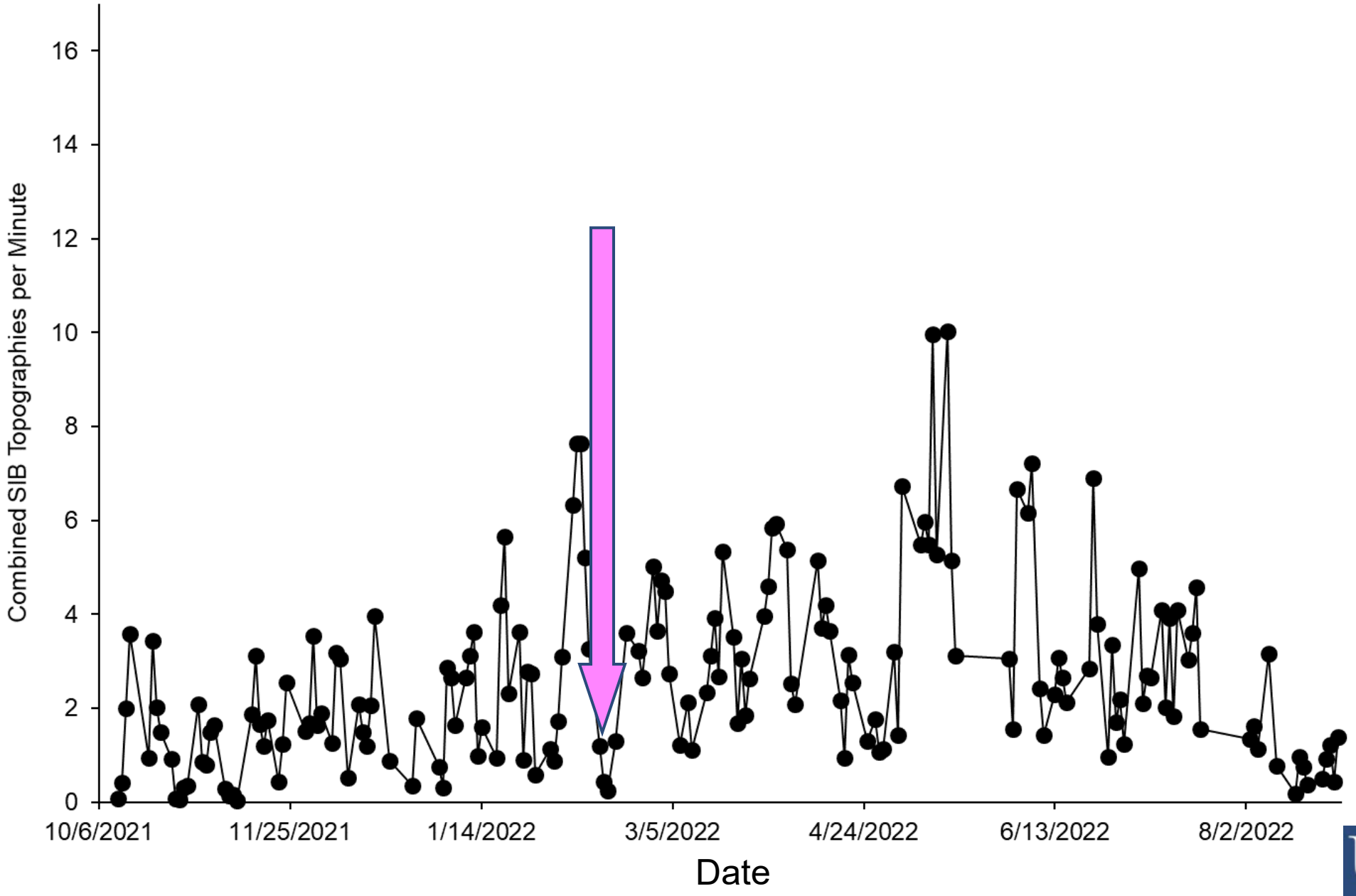
Daily Means



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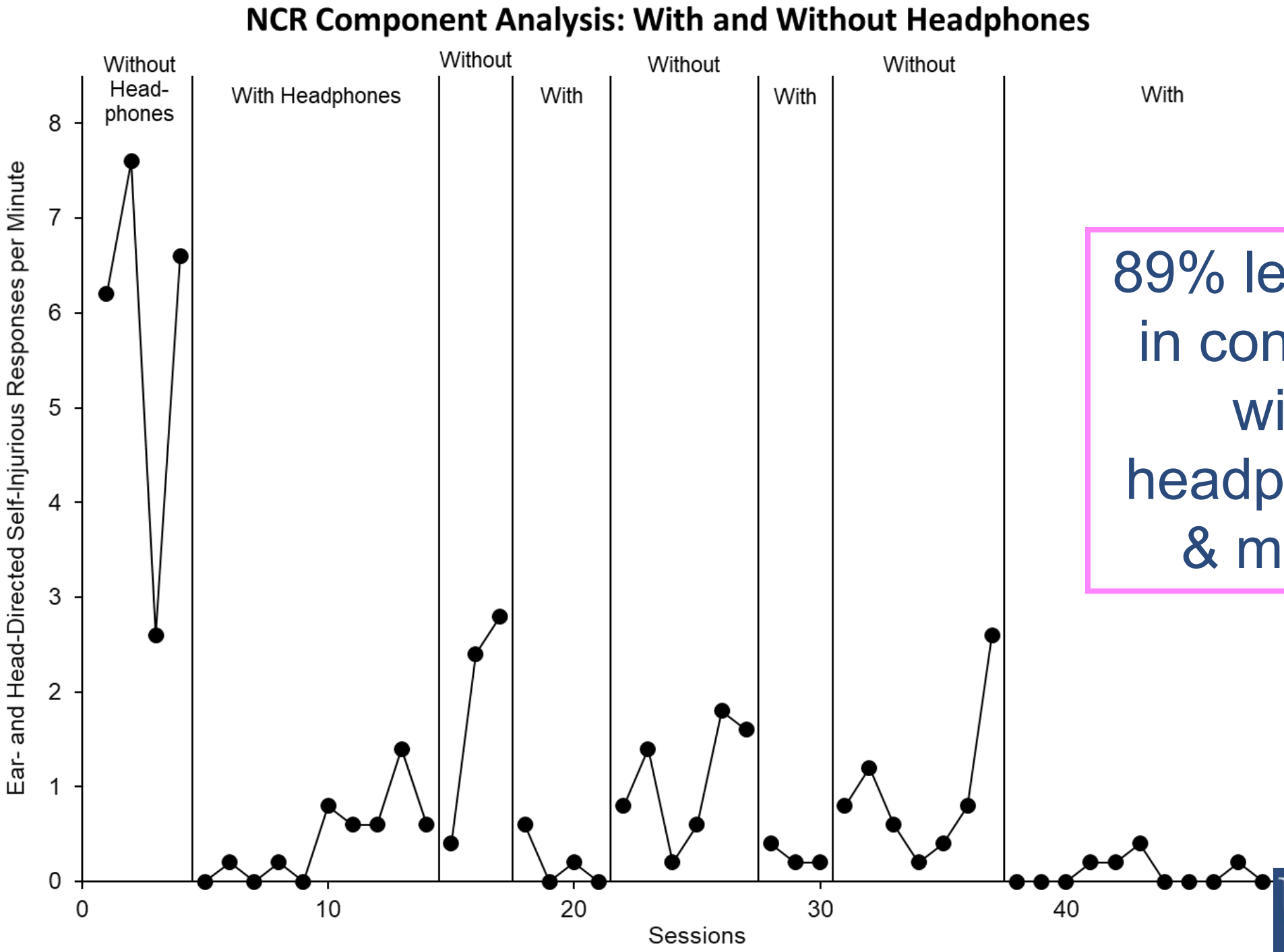

89% less SIB in condition with headphones & music

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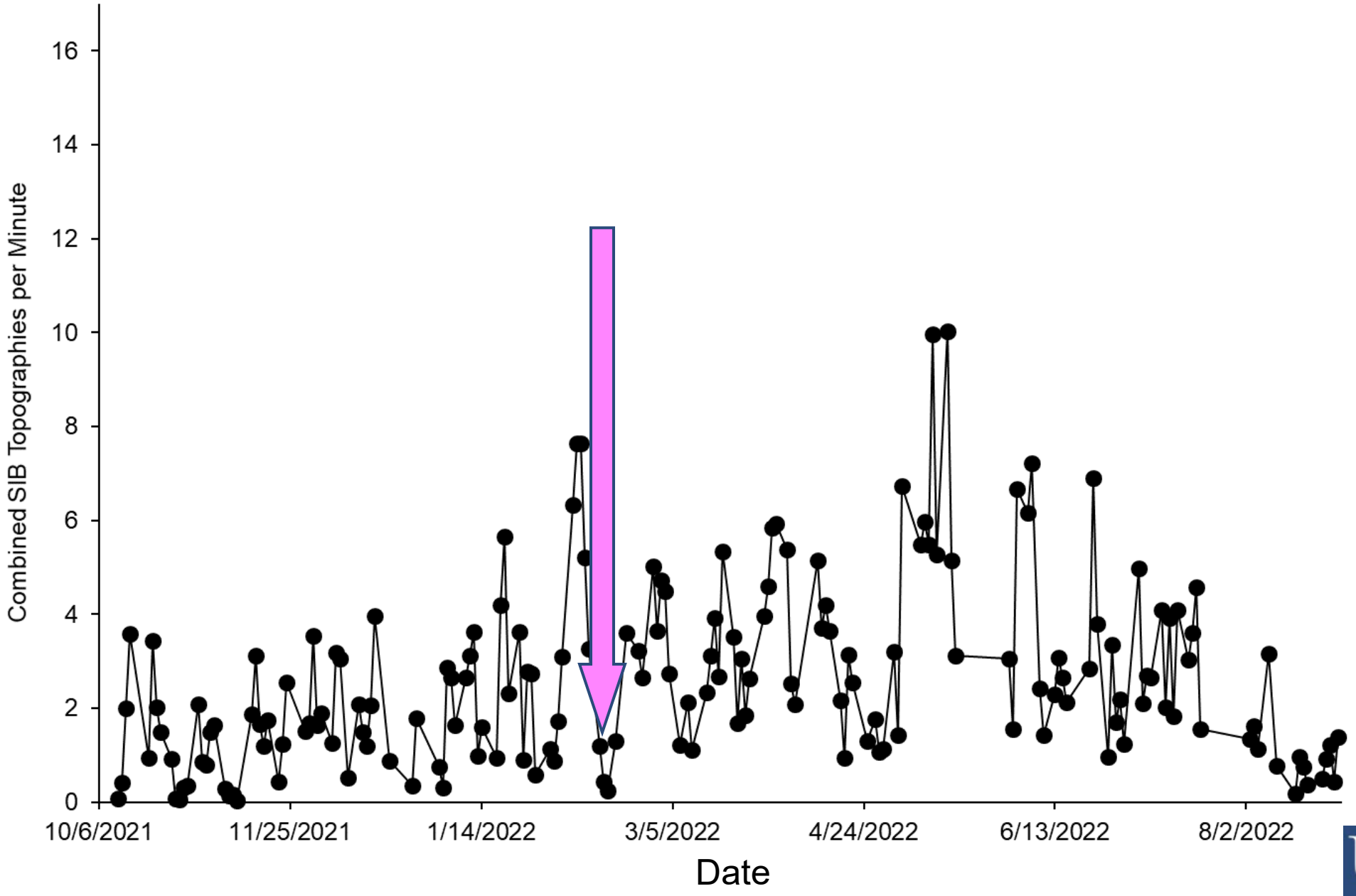
Daily Means



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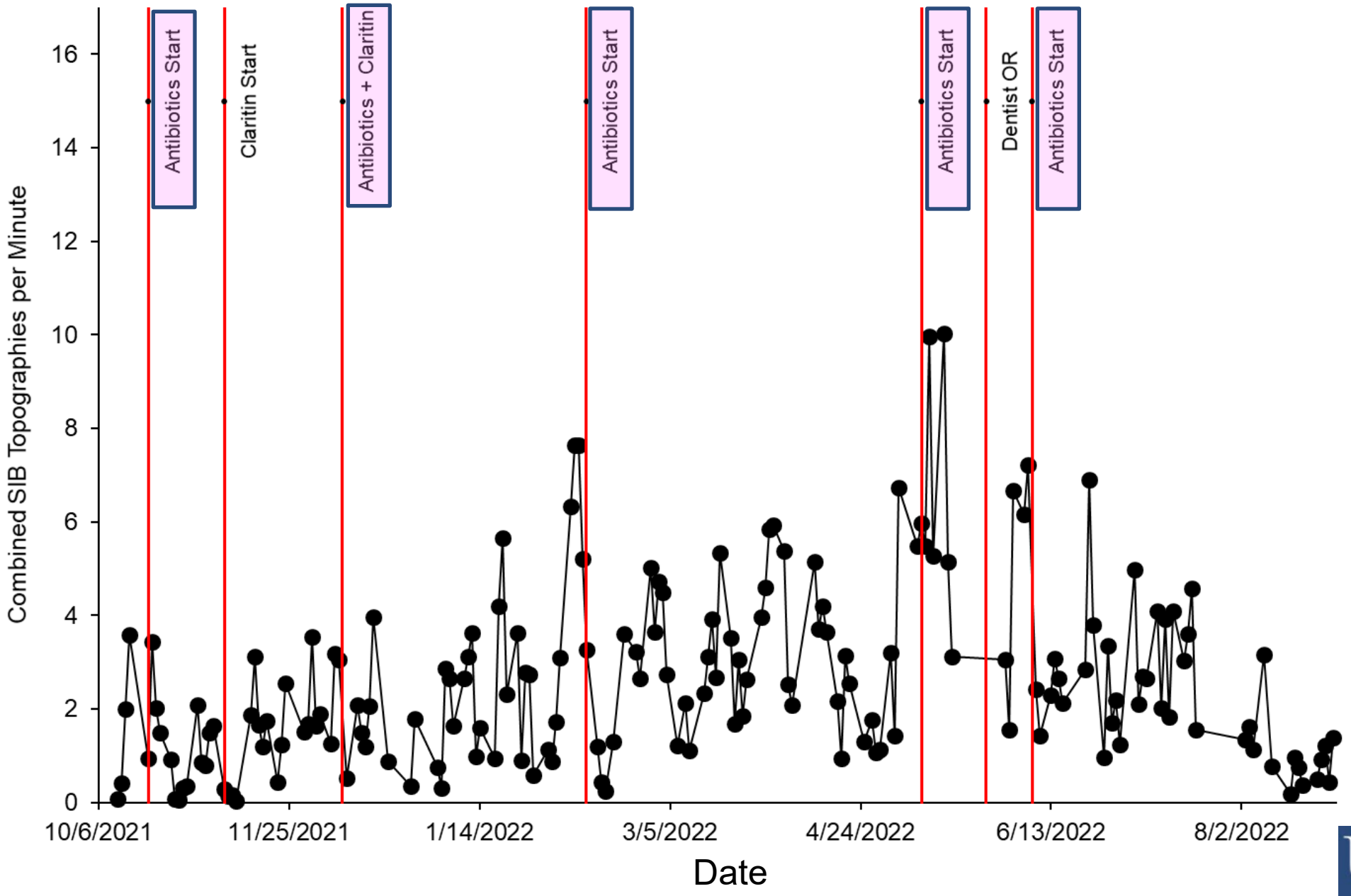
Daily Means



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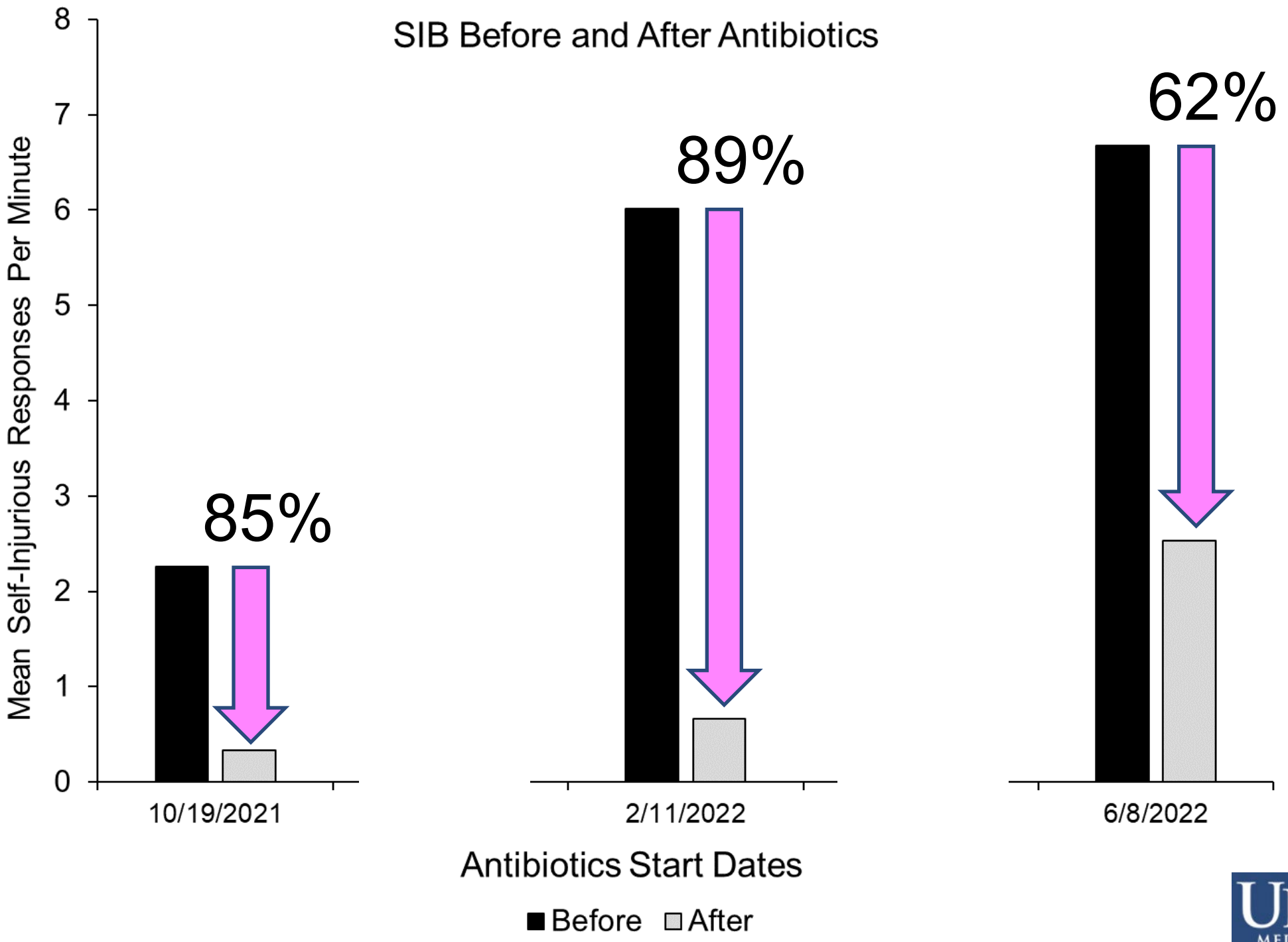

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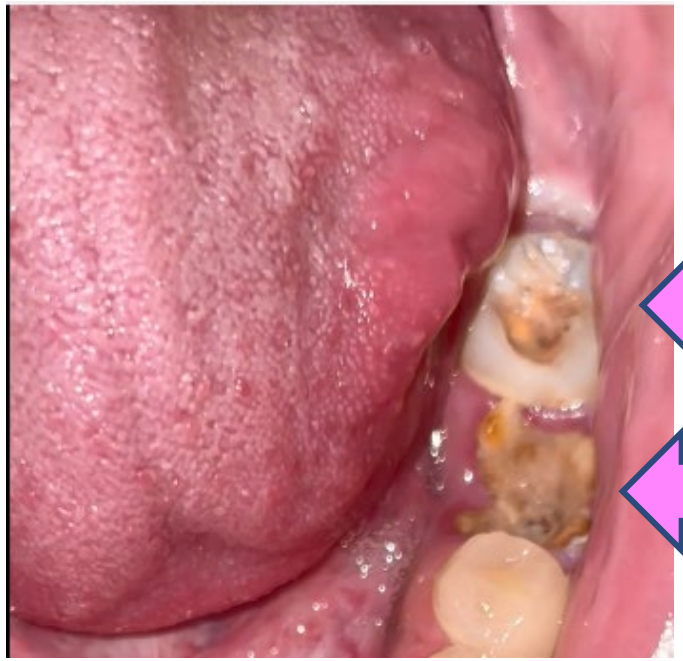
Dental Concerns

- Refused toothbrushing
- Had not seen dentist in years
- Had unfilled referral for dental appointment for about 1 year
- Additional referral went unfilled for months despite repeated calls
- Operating room waitlist >2 years
- Took a picture of his mouth...

Dental Concerns

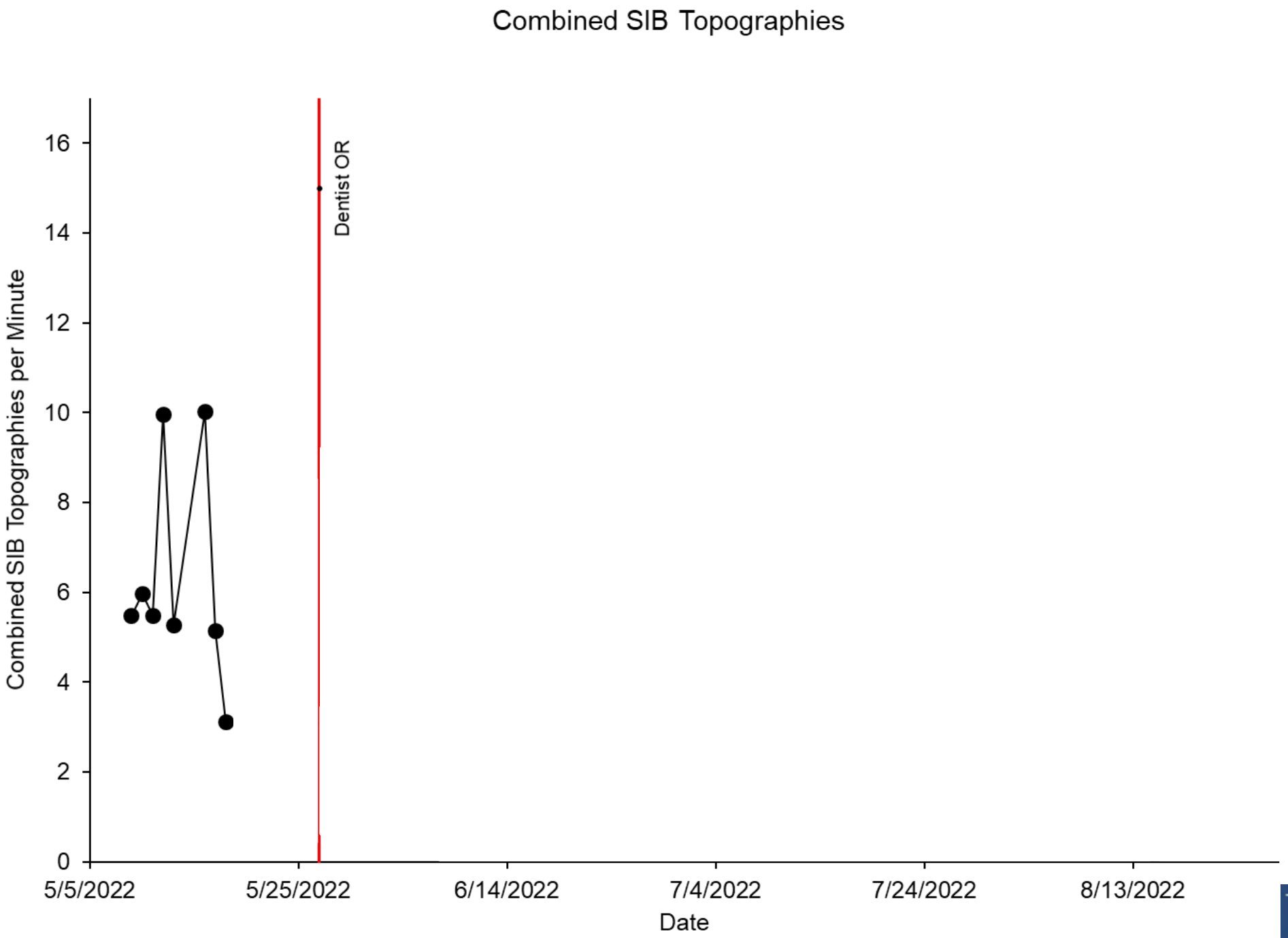


about 1 year of decay

about 3 years of decay

Dental Procedures

- Seen in operating room within a week of sharing the picture
- 4 teeth extracted
- 7 teeth filled
- Problem not fully resolved...



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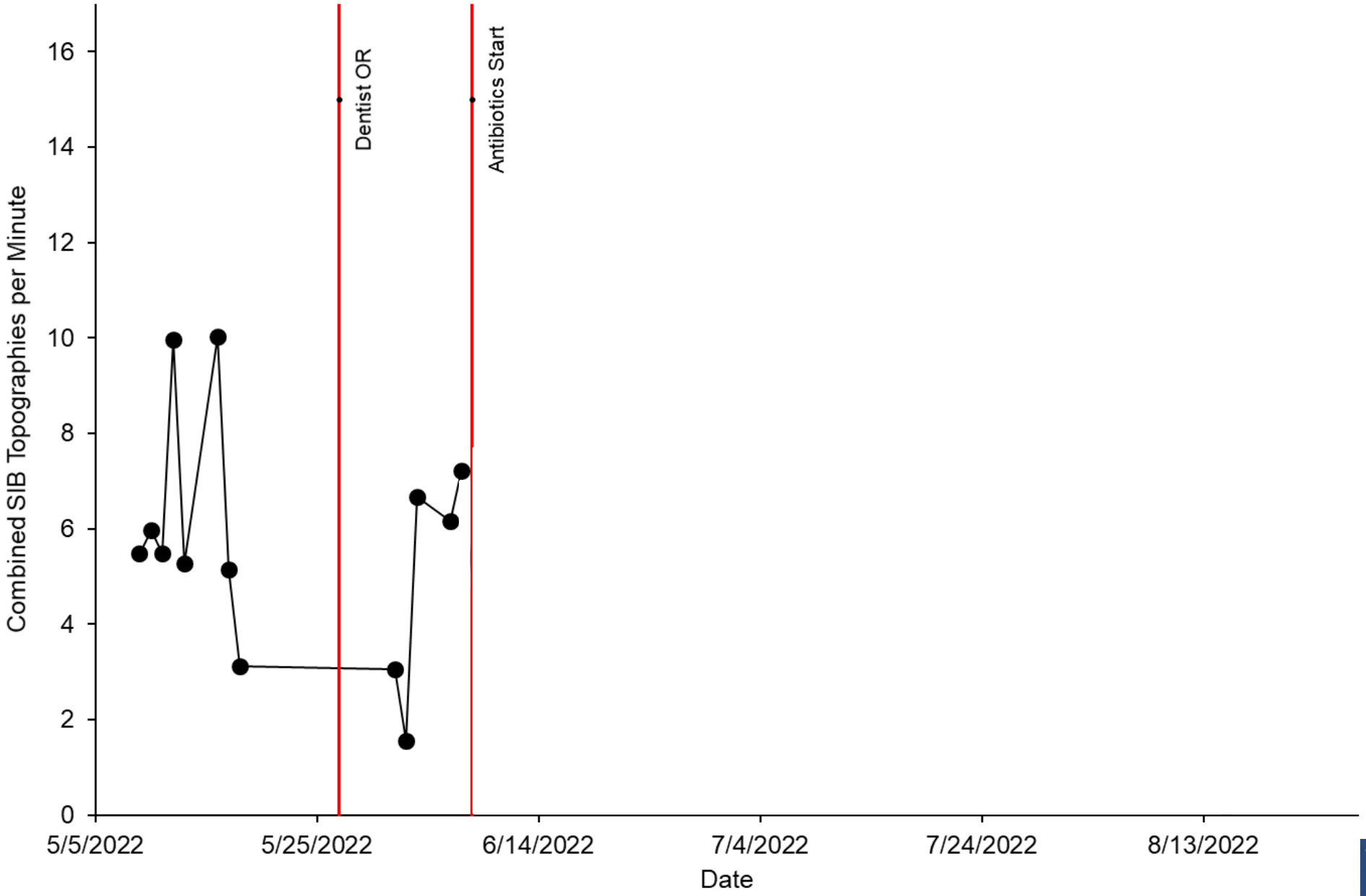
Daily Means



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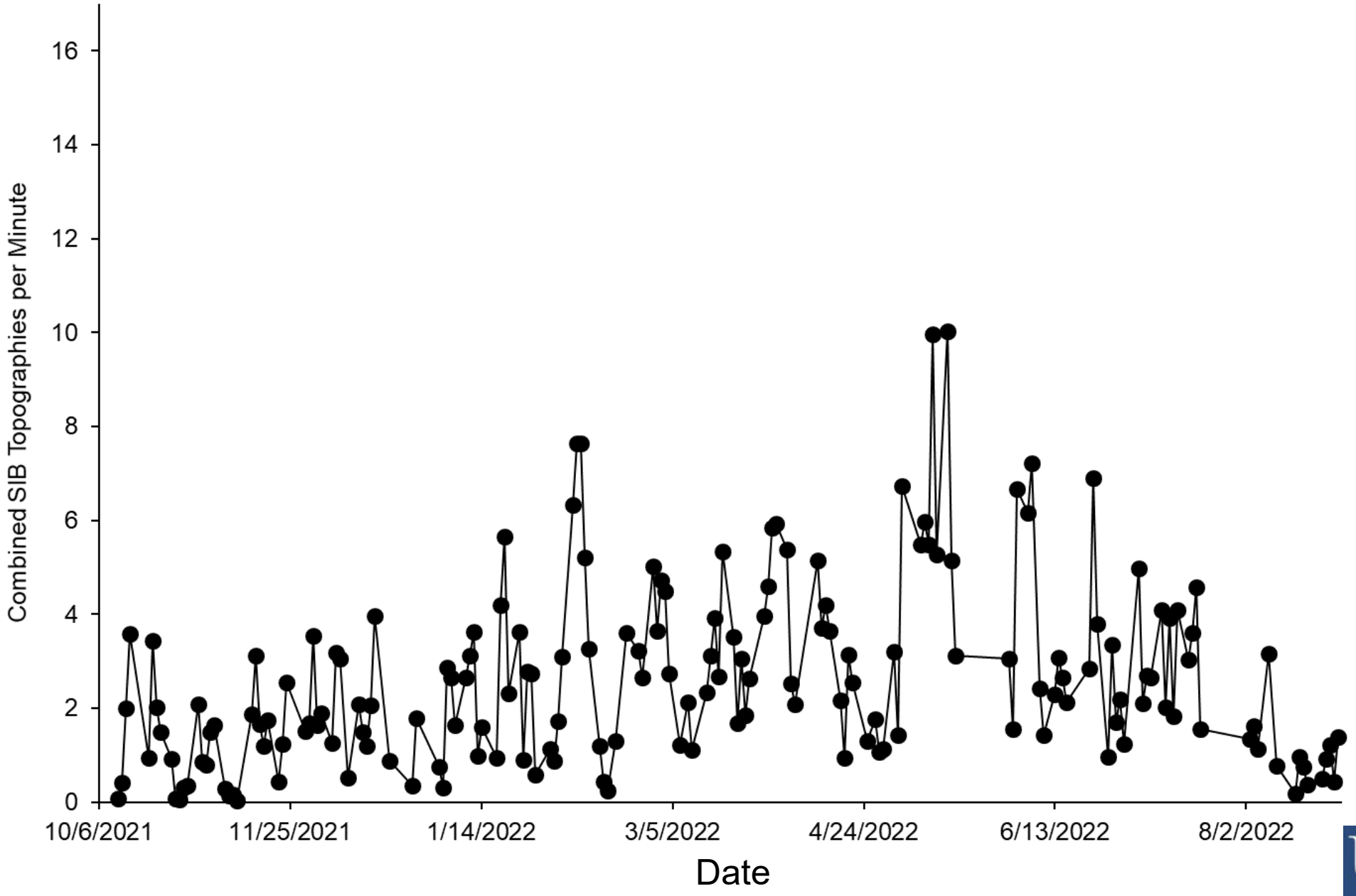
Daily Means



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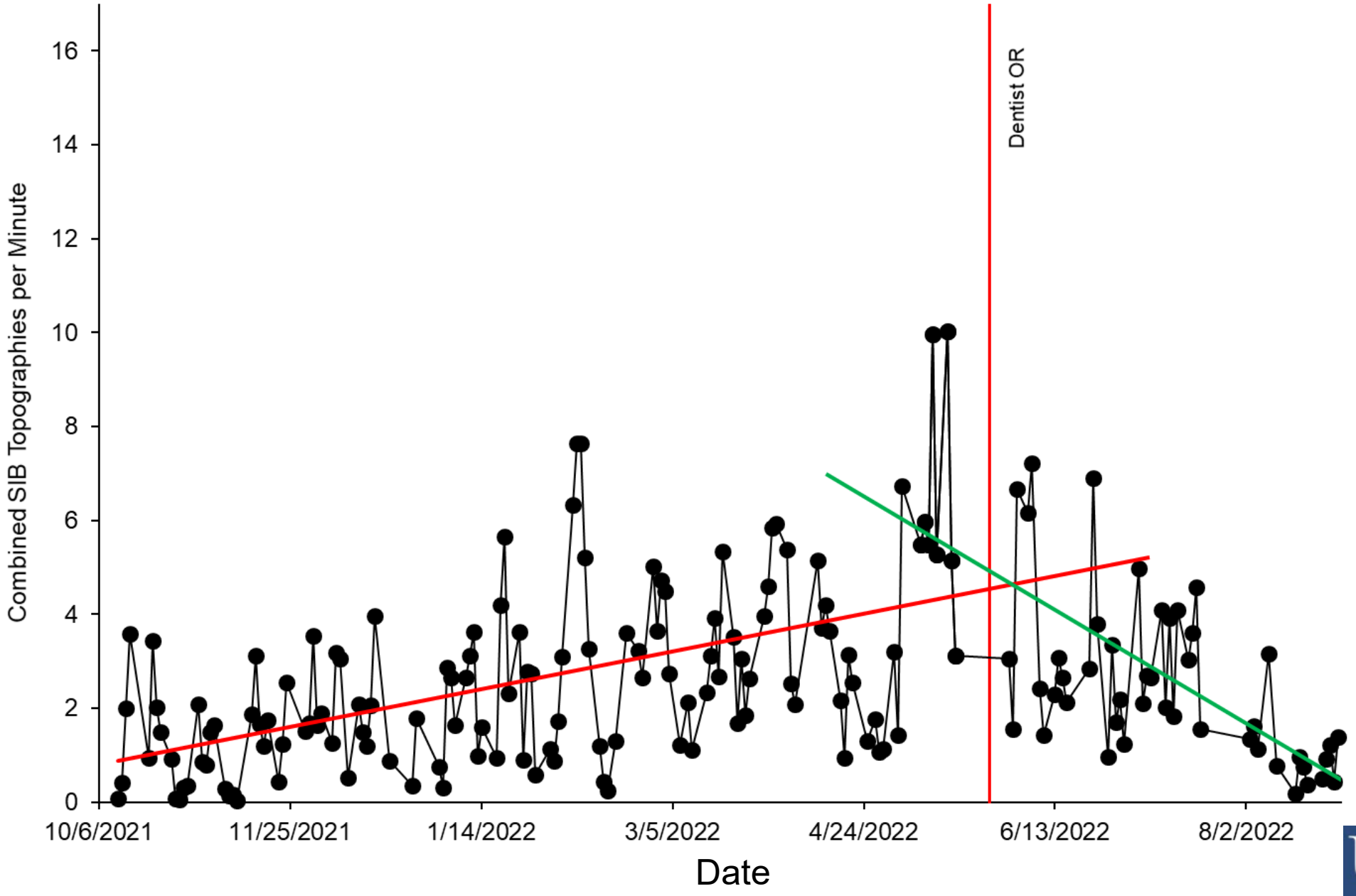
Daily Means



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Section Summary

- Medical concerns may underlie some behaviors
- Concerning if behavior is responsive to environmental changes sometimes, but not at other times
- Interdisciplinary approach sometimes necessary

Section Summary

- Assessment is a process and can be complex
  - Expertise
  - Creativity
  - Time
  - Resources
- Can still assess ways to minimize challenging behavior in the interim

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Next Section Selection

- Safety Considerations
- Assessment Example 1
- Treatment Example 1
- Treatment Example 2
- Assessing Stress
- Conclusions

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Assessing Patient Stress During Assessment and Treatment of Severe Challenging Behavior

Cortisol as a Biomarker for Stress

- Behavior analysis very good at reducing severe challenging behaviors
  - 80% reduction in over 90% of cases (Greer et al., 2016)
- Many of these individuals have limited communication repertoires
- Unclear whether treatments reduce stress for the individuals with limited communication repertoires

Cortisol as a Biomarker for Stress

- Salivary cortisol is most studied biomarker for stress (Giacomello et al., 2020)

- May be useful for assessing stress during assessment and treatment of severe challenging behavior for individuals who cannot communicate about their stress directly

Cortisol as a Biomarker for Stress

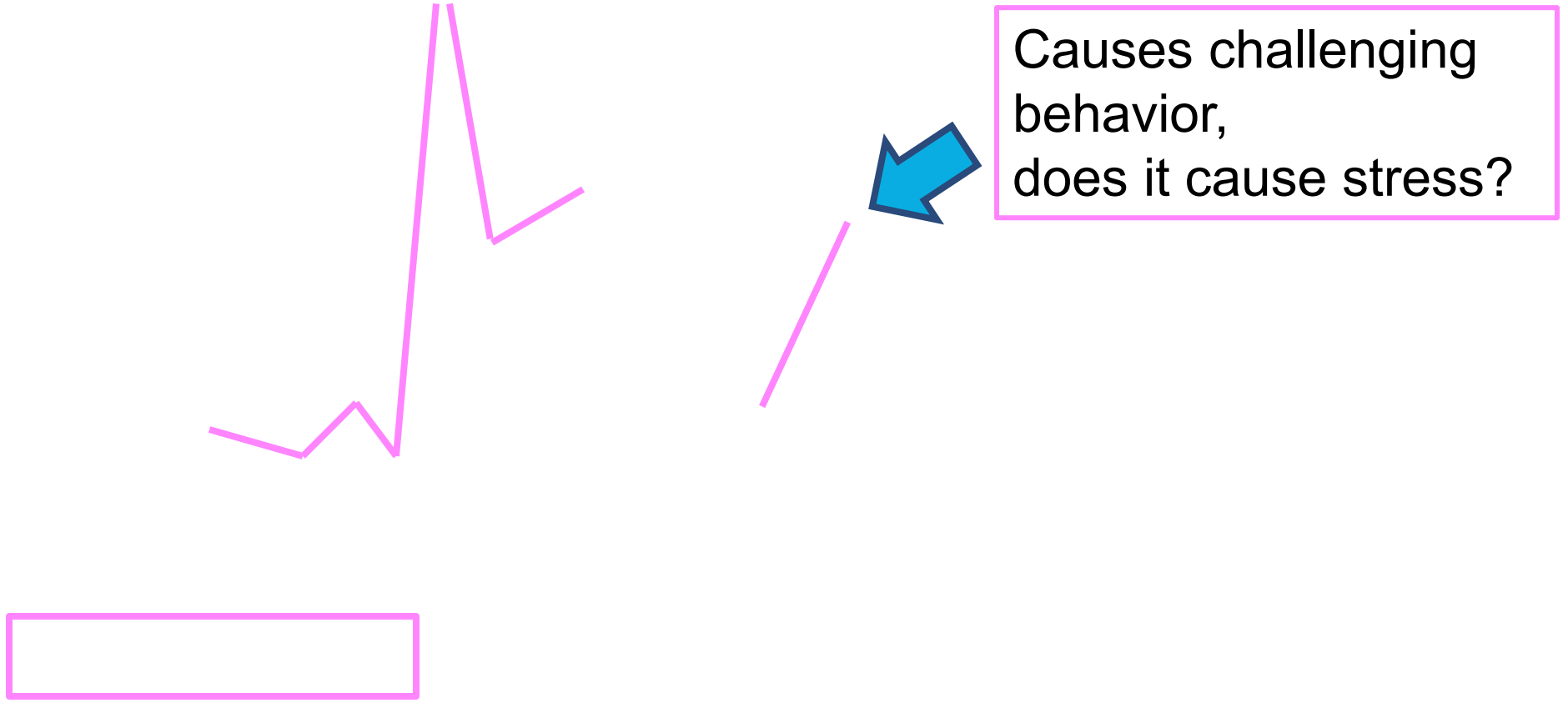
Cortisol as a Biomarker for Stress

Stress

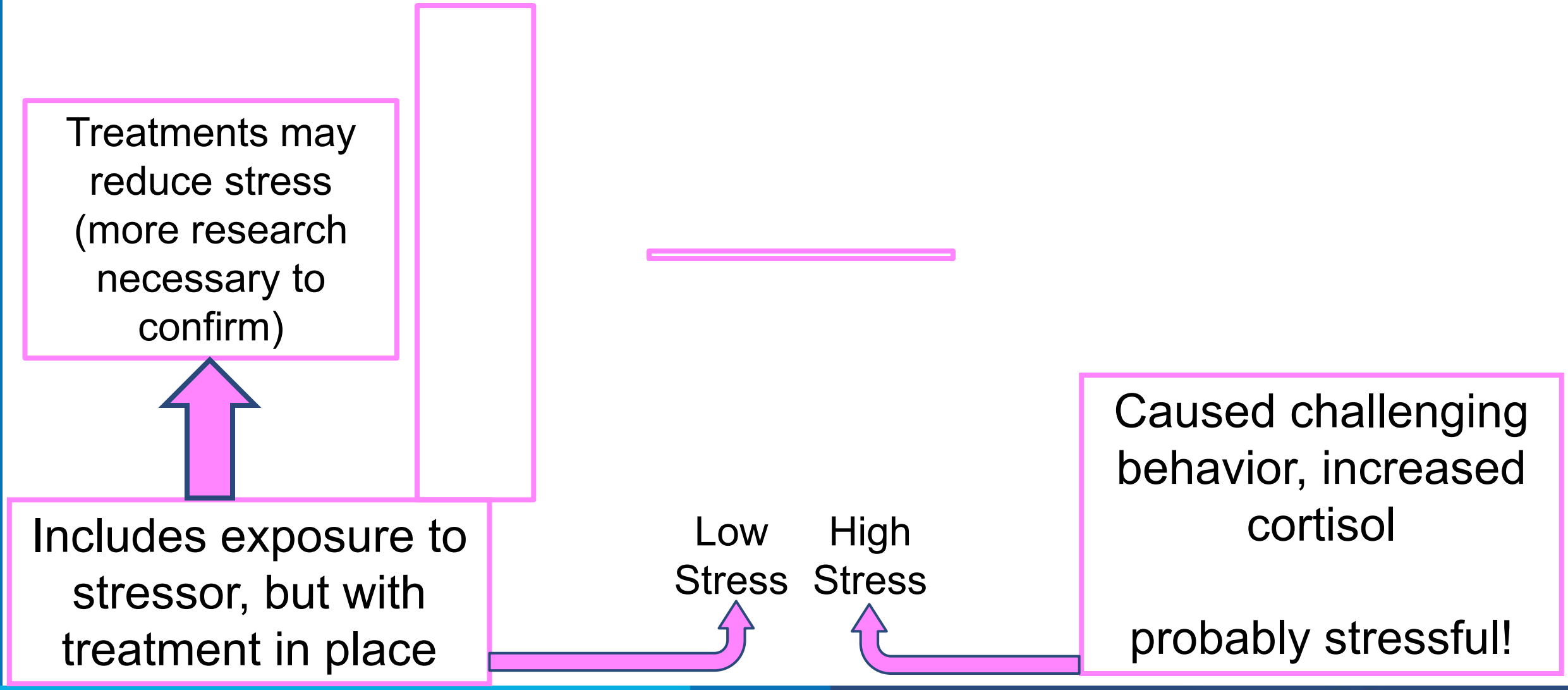
Stress

If stressful, should cause cortisol to increase

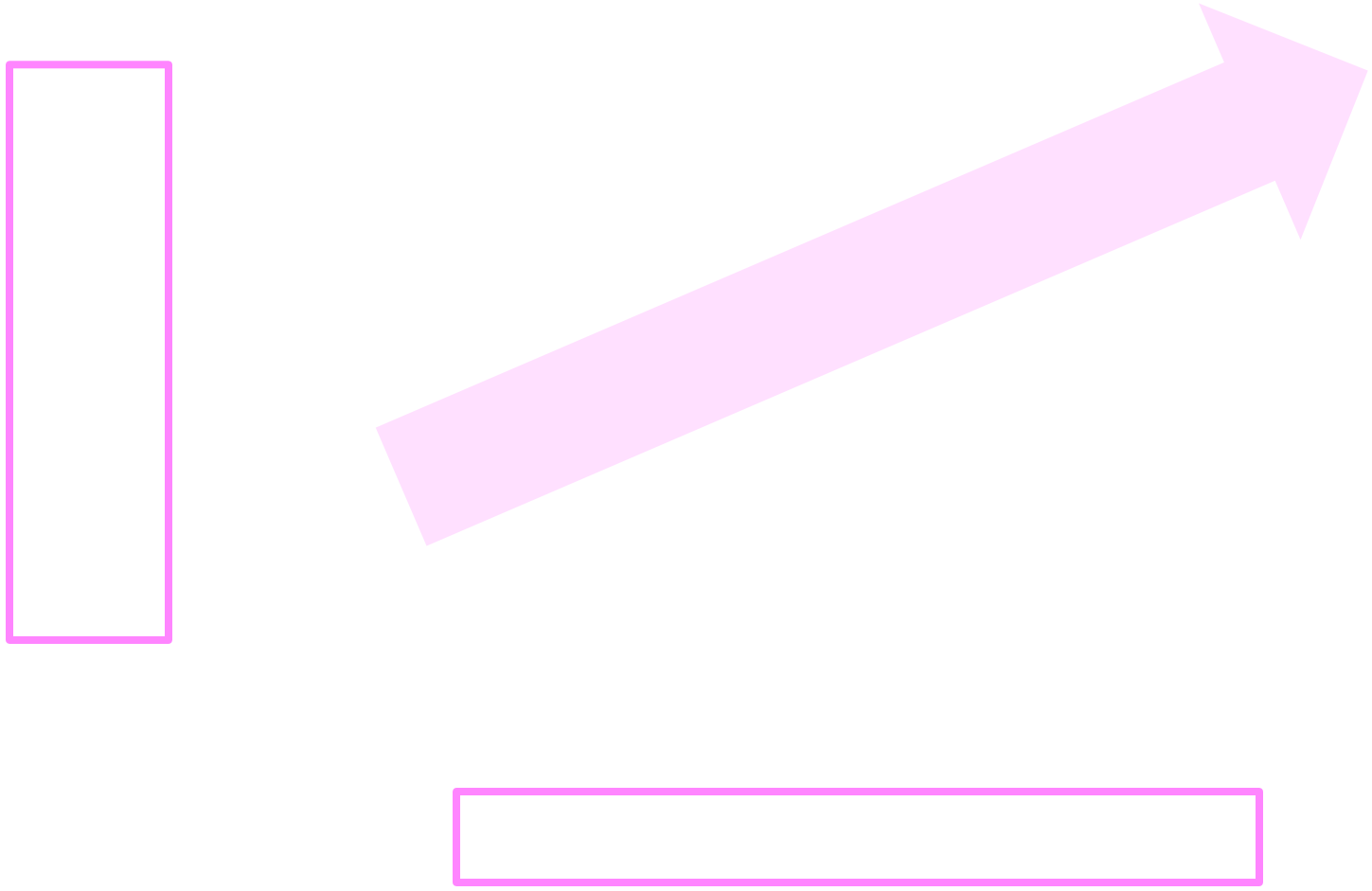
Challenging Behavior During Assessment and Treatment



Cortisol Reactivity



Correlation Between Cortisol Reactivity and Rates of Challenging Behavior



Cortisol as a Biomarker for Stress

- Preliminary data suggests salivary cortisol is promising as a potential outcome measure

- More research needed

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Next Section Selection

- Safety Considerations
- Assessment Example 1
- Treatment Example 1
- Treatment Example 2
- Assessing Stress
- Conclusions

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Conclusions

Conclusions

- Severe challenging behavior requires expert clinicians with access to appropriate resources
- Assessment is a process
  - Spending the time to do it thoroughly is worth it
  - Can continue to assess while treating other behaviors
- Treatment is a process too

Conclusions

- Clinical practice is often more convoluted than what research may make it seem
- Interdisciplinary approach is often necessary
  - Other disciplines also need expertise and resources

Conclusions

- Research is developing ways to target patient stress as an outcome during assessment and treatment of severe challenging behavior even if patient is unable to communicate about stress directly

Question 1

- True/False
- A standard functional analysis should not be customized based on indirect assessments

- False

Question 2

- True/False
- All assessments need to be complete before treatments can begin.

- False

Question 3

- True/False
- A comprehensive, multi-component treatment if often necessary to treat severe destructive behavior.

- True