Self-injurious behavior in young children: Pearls, pitfalls, and room to grow

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DISCLOSURES

1. I have no relevant financial relationships with the manufacturers(s) of any commercial product(s) and/or provider of commercial services discussed in this CME activity

2. I do not intend to discuss an unapproved/investigative use of a commercial product/device in my presentation.

What’s in a Name ….


2. “A response that produces physical injury to the individual’s own body.” – Tate & Baroff (1986)

3. “A self-directed behavior ... that is socially unacceptable and places the individual or others in jeopardy ... affecting education, living placement, and community involvement.” – Emerson, 2001

4. “Self-directed acts ... cause immediate tissue damage or have the potential to do so if left untreated” – Rojahn, Schroeder, & High (2007)
**OK, so what qualifies??**

- Headbanging
- Face/Body Slapping
- Hair Pulling
- Biting Self
- Eye poking/pressing
- Rectal Digging
- Scratching/skin picking
- Rumination
- Aerophagia
- Pica
- Hand mouthing
- Body hitting
- Polydipsia
- Body slamming

Most prevalent across all children under age 5 years old (MacLean et al., 2020)

**Clinical Significance of SIB**

1. Host of negative outcomes
   - Significant health risks
   - Impact on QOL
   - Restrictive Treatment Practices
   - Residential placement
   - Increased caregiver/family stress
2. NIH (1991): Costs of care exceed $3 billion
3. Subset with Chronic SIB
   - Highly treatment resistant

**RISK FACTORS**

- Autism
- Developmental delays
- Sensory processing abnormalities
- Speech delays
- Motor stereotypies
- Irritability
- Impulsivity
- Early childhood trauma
- Certain genetic disorders
- Certain medical conditions
- Other behavior problems
- Abnormal pain thresholds

Cunningham et al., 2008; Emnes et al., 2003; Friddle et al., 2010; Friddle et al., 2015; Friddle et al., submitted; McLean et al., 2020;
Matson et al., 2009; Holden et al., 2006; McTiernan et al., 2011; Murphy et al., 2005; Hemmings et al., 2006; Sturmey et al., 2010; Summers et al., 2017; Symons et al., 2009; Petty et al., 2016; Van Dyke et al., 1997; O'Reilly, 1997
Trajectory of early SIB

- SIB occurs early in across both groups
- No significant difference across groups until ~turn 2 years old
- Neurotypical toddlers benefit from explosion in language (and other milestone progression) which may be related to mitigation of SIB around 2nd birthday
- Neurodivergent/DD toddlers SIB persists thru age 4 years old
- There are still some (albeit very few) neurotypical toddlers whose SIB persists thru age 4 years old

AAP Guidelines for SIB in children

Health et al., 2016; Sarles & Edwards, 2016:

Step 1: Rule out acute or chronic medical conditions
Step 2: Referral to developmental pediatrician or subspecialty medical provider as needed
Step 3: Refer for a functional-behavior assessment (FBA) by a BCBA/behavioral psychologist and initiate behavior therapy
Step 4: If SIB causes tissue damage, interferes with social/emotional development, or persists beyond age 3 years old, refer to a child psychologist and/or child psychiatrist

Note: Even AAP says, SIB should be "checked out"/treated before by age 3 years old!

What is happening in primary care?

Were SIB-specific Recommendations Provided?

Fig 1: Pediatrician response to patient/SIB concerns. *Note: RXC = medicine was prescribed

Fodstad, Gonzalez, Barber, Curtin (2022)
Early Intervention for SIB Exists (Regardless of Neurodevelopmental Status)

Step 1: Assessment

Define the “Behavior”

1. What are we talking about here?

<table>
<thead>
<tr>
<th>Could Also Mean ...</th>
<th>Self-injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noncompliance</td>
<td></td>
</tr>
<tr>
<td>Physical or Verbal Aggression</td>
<td>Tantrums/Meltdowns</td>
</tr>
<tr>
<td>Property Destruction</td>
<td>Hyperactive Behavior</td>
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</tbody>
</table>

2. Be as clear/specific as possible
   - E.g., Stephanie engages in physical aggression. When aggressive, she engages in hitting, kicking, scratching, pinching, biting others, throwing objects at others, and head-butting others.
   - E.g., David has major meltdowns. When he has a meltdown, he engages in screaming, crying, and/or self-injury (biting himself on the face/head with open hand/closed fist, biting his hand), and either dropping or flapping to the floor or running away from caregiver supervision.
Define the “Behavior”

3. How frequent?
   - Daily, weekly, monthly
   - If daily, once?, less than 5?, between 5-10x?, greater than 10?
   - When was the last time the behavior occurred?

4. How severe?
   - Any redness, bruising, swelling?
   - Anyone had to seek more than basic first aid? Concussions, loss of consciousness, broken bones?
   - Tell me the worst example? How long ago was that?
   - Do they tend to target a specific “vulnerable” person?
   - Ever had to go to ED, inpatient admissions, residential stays?

5. How long has the behavior been occurring?
   - Newly emerging behavior?

Understand the “Before Behavior”

ANTICIPANTS
1. Could there be co-occurring medical conditions?
   - Seizures
   - How is their eating, sleeping, and pooping?
   - Hearing, vision?
   - Genetic or other contributing medical/developmental conditions?

2. Could there be co-occurring psychiatric conditions?

3. Any stressors or trauma, or recent changes?

4. What is their level of expressive language? (words, signs, pointing)

5. What may be contributing factors in the environment?
   - Home, school, community?
   - Morning vs night? Bedtime? Bath time? School?
   - What are salient/clear triggers for behavior?

Understand the “After Behavior”

CONSEQUENCES
1. Behavior is shaped/learned, and serves some sort of purpose – often a “communicative” purpose

2. How others respond when SIB occurs can make it more or less likely to occur again in the future
   - Questions to ask:
     - What do they do in the moment when the behavior occurs?
     - How did they get the behavior to “stop”?
     - How well does it stop in the short-term? And in long-term?
     - What do they do after the behavior is done?
     - Does it seem to become a game?
     - Alternatively, when child is “calm”, how does the parent respond?
     - What are things that like are motivating?
Summary: What's Your Function?

All behaviors serve a purpose

<table>
<thead>
<tr>
<th>Purpose</th>
<th>What It Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>“Come see Me!”, “Look at Me!”</td>
</tr>
<tr>
<td>Tangible</td>
<td>“I want X!”, “Don’t take X away!”</td>
</tr>
<tr>
<td>Escape/Avoidance</td>
<td>“I don’t want to do X!”, “Oh no, X is about to happen!”</td>
</tr>
<tr>
<td>Automatic/Sensory</td>
<td>“This behavior feels good!”</td>
</tr>
<tr>
<td>Pain/Injury</td>
<td>“I don’t feel so good!”</td>
</tr>
</tbody>
</table>

Note: This is a basic summary and does not discount all the other known contributors or factors related to behavioral emergence, occurrence, and maintenance. All information gathered for a complete biopsychosocial should be factored into treatment recommendations.

Step 2: Refer and Initial Recommendations

You’ve Assessed … Now What?

Follow AAP Guidelines

Step 1: Rule out acute or chronic medical conditions

Step 2: Referral to developmental pediatrician or subspecialty medical provider as needed

Step 3: Refer for a functional behavior assessment (FBA) by a BCBA/behavioral psychologist and initiate behavior therapy, including parent training

Step 4: If SIB causes tissue damage, interferes with social/emotional development, or persists beyond age 3 years old, refer to a child psychologist and/or child psychiatrist
You’ve Assessed … Now What?
Initial Recommendations YOU Can Start!!!
... But first thing first

Initial Recommendations To Start
1. If behavior onsets suddenly or quickly escalates, can trial Tylenol to test out if “pain” is contributing and then work backwards.
2. If pooping, sleeping, and/or eating difficulties are thought to contribute, we want to reduce their impact through standard treatments for those issues.
3. Refer to other needed therapeutic services addressing areas of impairment that are factoring into early SIb.

Initial Recommendations To Start
4. Headbanging: Be careful with recommending helmets.
   a. If the behavior is sensory seeking, use of helmets may result in the emergence of other self-injurious behaviors
   b. Can lead to other negative behaviors
   c. If a helmet is necessary, a clear plan needs to be in place for when helmet is in use vs. not in use; a clear plan to fade the helmet out completely also needs to occur. Someone (not the parent) needs to oversee supervising the plan.
5. Headbanging on hard surfaces:
   a. Move child to a softer surface (couch, bed) or slip a pillow underneath their head.
   b. Remove or pad/modify specific item, thing, or area often targeted (e.g., their crib, the corner of the coffee table, etc.).
Initial Recommendations To Start

6. Redirect at FIRST SIGNS of irritability (and before SIB occurs)
   a. First/then or if/then statements
   b. Offer choices
   c. Instead of "no" use "A is not available now ... but B or C is immediately available now," and say when A will be available. Make sure to follow through
   d. If able, prompt HELP or BREAK (or other relevant "mand")

7. Use the W.A.I.T. (Why Am I Talking/Etc.) skill like a champ!
   a. Reduce excessive talking, "giving the child ‘things’ to calm them down, or allowing them out tasks or demands.
   b. Note: It is hard to ignore until the behavior completely stops. Be mindful when recommending "ignoring" SIB to parents and be ready to modify this skill.

Initial Recommendations To Start

8. If behavior is sensory seeking
   a. Increase level of activity engagement.
      a. Keeping the child more occupied can reduce boredom/sedentary time.
   b. Find an item or activity that is associated with low levels of self-injury. It does NOT have to serve the same sensory input as the self-injury behavior.
      a. Give continuous access to this item – especially during times of low-activity/boredom. If the child is not engaging in the item, represent it until they do. If the item does not lower the SIB or the child does not eventually “use the item,” identify another item that competes with their desire to engage in self-injury.

Case Examples
Assessment and Treatment
Case Example #1

“Suzy”
- 19-months-old
- Began hair-pulling at age 15-months
At intake:
  - 1.75 inches in diameter majorly thinned area on front of crown and minor thinning at bilateral temples
  - Co-occurring hair “weaving” and thumb sucking
  - Poor sleep
  - Neurotypically developing
  - Medical evaluation unremarkable
  - No significant stressors/family history
  - Patient did not seem distressed when pulling hair

“Natalie”
- 23-months-old
- Began hair-pulling at age 16-months
At intake:
  - 2 thinned nearly bald spots: 1 inch and 1.5 inches in diameter on each side of head along midparietal ridge
  - Poor sleep
  - Neurotypically developing
  - Medical evaluation unremarkable
  - No significant stressors/family history

Notable outcomes for Suzy:
1) Hair-pulling most often occurred just before sleep onset and during sedentary activities
2) Took late afternoon naps (often going until 4:30/5pm)
3) Bedtime routine started at 7:30pm often asleep by 8pm

Notable outcomes for Natalie:
1) Hair-pulling most often occurred just before sleep onset and during sedentary activities
2) No clear naptime, often taking car naps in the afternoon lasting 30-45 minutes (nonconsecutively) or skittish (up to 4 hours) naps at home
3) No clear bedtime routine, highly variable sleep onset time

Treatment for Both Suzy and Natalie
1. Hair-pulling: Training on Basic Behavioral Parenting Strategies + Competing Items + Differential Reinforcement of Alternative Behavior
2. Sleep Quality: Sleep Psychoeducation, Improving Sleep Hygiene, and Bedtime/Naptime Shaping

Treatment Outcomes
Ø Suzy: Hair-pulling decreased from mean of 43.6% to 20.6% of intervals, last 3 data points yielded 85.7% decrease. Ideal sleep improved from a mean of 30.8% to 44.0% of intervals
Ø Natalie: Hair-pulling decreased from mean of 36.9% to 15.6% of intervals, last 3 data points yielded 98.1% decrease. Ideal sleep improved from a mean of 31.0% to 41.3%
Case Example #2

“Samuel”
- 3 years old, 0 months at intake
- Top Behaviors of Concern:
  - Headbanging: Puts hands on head and forward/backward hits head on objects
  - Other SIB: Face hitting, self pinching, hair-pulling
- DX: Autism Spectrum Disorder, epilepsy
- Daytime care provided at home; family lived in rural area with limited services; family had 1 car for transportation
- Language: No expressive speech; has 4 signs uses functionally (eat, bye, bye, more, all done)
- Medication: ethosuximide (2.5 mL, 2x/day), iron, Tylenol/ibuprofen (as needed), melatonin (as needed)
- Poor sleep – night-wakings, sleep onset associated with SIB, limited daytime napping
- Triggers: Interrupting desired task, saying “no”/denied access, “bored”, siblings not playing with him
- Parents manage behaviors by: Hugging, talking to him, rubbing back/head, playing with him, giving him something to eat/drink
- Other services/specialties involved: Neurology, Pediatrics/Developmental Pediatrics (referring provider), Speech, Occupational Therapy

Case Example: Samuel

- Treatment Involved 3 Core Areas:
  1. Care Coordination across providers
     - During course of treatment added Sleep Medicine and Psychiatry sub-specialists to team
  2. Increase Access to Home-based Services
  3. SIB-specific individualized interventions implemented by caregivers through focused telehealth-based parent training and coaching
     - Picture- and sign-based Functional Communication Training
     - Minimizing Excessive Verbal + Physical Attention Contingent Upon SIB
     - Redirecting at Early Signs of Behavior
     - Increase visual-structure, and consistent routines in home
     - Environmental Engineering
     - Received Weekly Text-based Monitoring Tools to Rate Behavior, Reminders of Skills Working On/Troubleshooting Tips, Relevant Videos/Handouts, “Confidence Boosters”

SIB Severity Rating Scale
(0 = not a problem, 10 = severe problem, occurring more often than not, very harmful)
Questions?

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