FAMILY SUPPORT Institute of BC

Safety: Equipment & Medication

SIB Web-Based Parent Support Group

Family Support Institute of BC

Land Acknowledgement

We would like to acknowledge that we have the privilege of presenting from the traditional, ancestral, and unceded territories of the Sḵwx̱wú7mesh (Squamish), Stó:lō and Səlílwətaʔ/ Selilwitulh (Tsleil-Waututh) and xʷməθkʷəy̓əm (Musqueam) people.

Introduction

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Agenda

1. Brief Intro to SIB Assessment and Management
2. Safety Part 1: Protective Equipment
3. Safety Part 2: Medications
4. Question Submission

Sabus et al., 2019; Mcguire et al., 2016

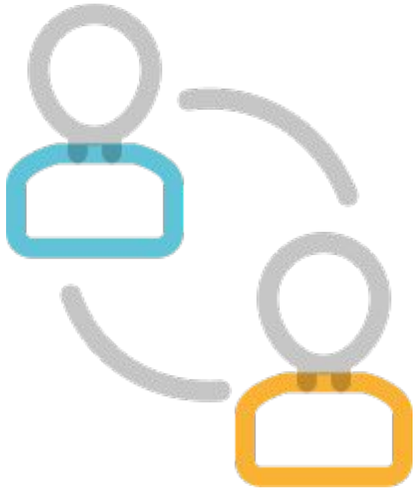
SIB Assessment & Management

Step 1: medical workup to rule out underlying causes of SIB

Underlying causes may include:

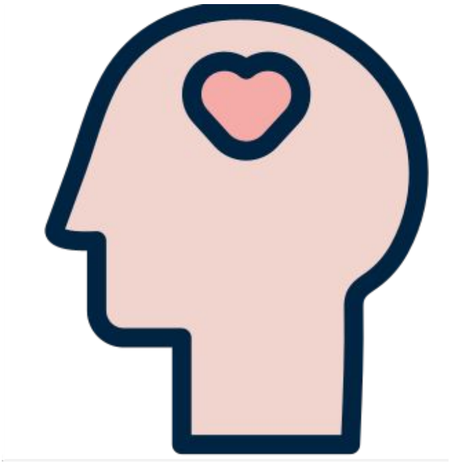
Medical Factor

e.g. pain, GI disorder, sleep disorder



Environmental or Social Factor

e.g. stressful life event, problems at school

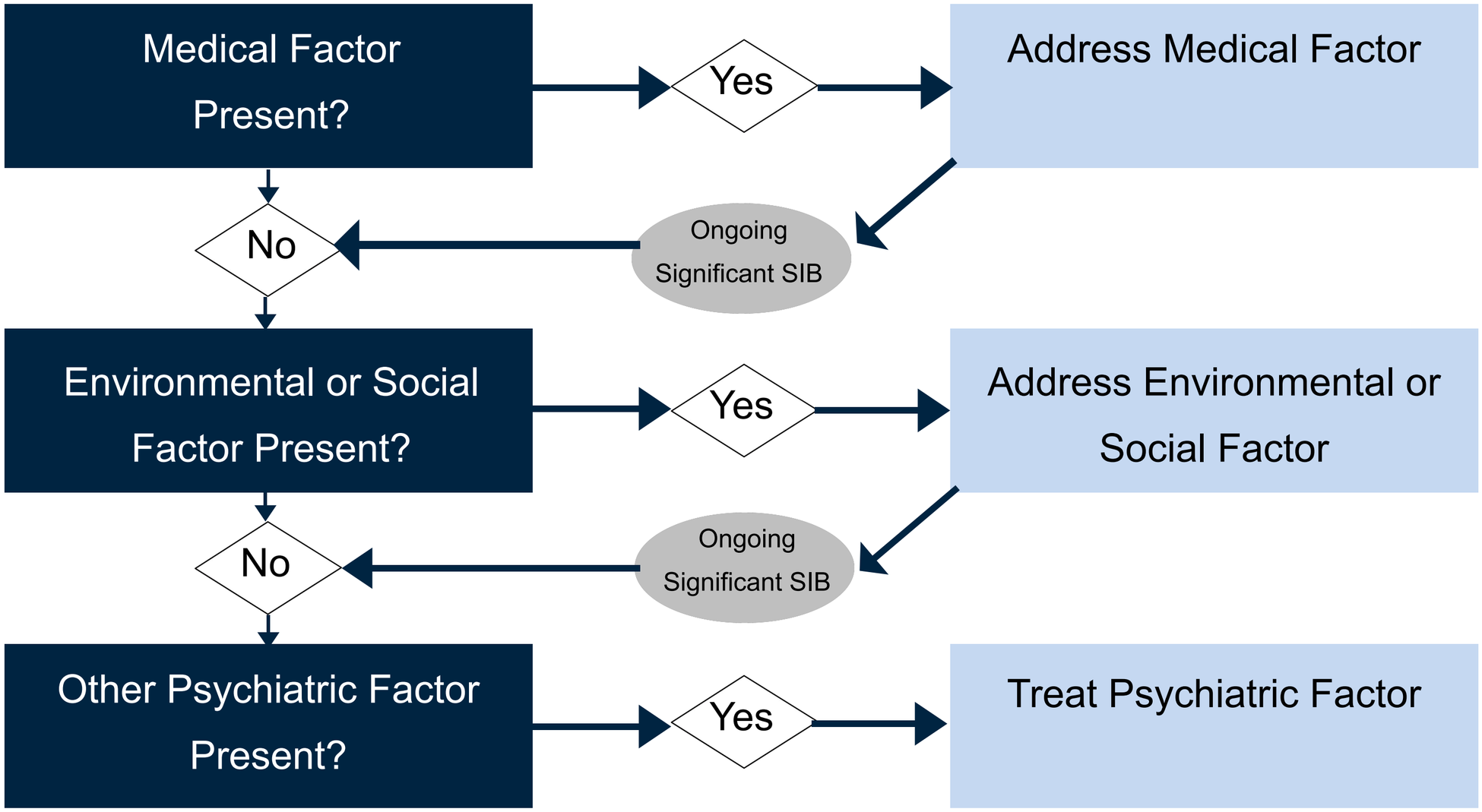


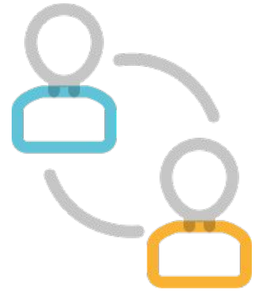
Other Psychiatric Disorder

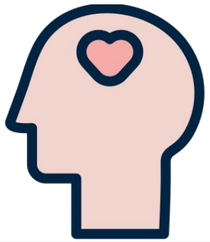
e.g. anxiety, ADHD, mood disorder

SIB Assessment Algorithm

Friedlander et al., ASD Algorithm







Sabus et al., 2019; Mcguire et al., 2016;

Ongoing significant symptoms?

Implement or modify existing behavioural interventions

Medication targeting SIB

Severe SIB may warrant immediate use of protective equipment or medication to reduce risk of harm to self/others

SIB Management

2 Goals of SIB Management

Long-term Goal:

Behaviour Reduction

- Behavioural intervention
- Drug therapy

Short-term Goal: Behaviour

Management

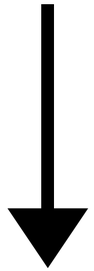
- Protective Equipment
- PRN Medications

SIB Management

Long-term Goal:

Behaviour Reduction

- Behavioural intervention
- Drug therapy

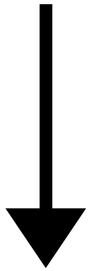


What will help make the behaviour go away?

Short-term Goal:

Behaviour Management

- Protective Equipment
- PRN Medications



How do I deal with this behaviour right now?

SIB Assessment & Management

2 Main Goals of SIB Management

Long-term Behaviour Reduction

- Behavioural intervention
- Drug therapy

Short-term Behaviour Management

- Protective Equipment
- As needed (PRN) Medications

SIB Management

Short-term Behaviour Management

Protective Equipment

As needed (PRN) Medications

Part 1: Protective Equipment

Types of Protective Equipment

Sparring helmet

+/- face shield

Hockey padding

Weighted Blanket

OT helmet

Kevlar

Reed et al., 2013

Protective Equipment vs Restraint

Protective Equipment

Devices or specialized clothing worn to lessen the health and safety risks associated with destructive behaviour

Restraints

Restriction of an individual's movement or activities

- physical (mechanical devices)
- chemical (sedating medications)

When should protective equipment be used?

Busch et al., 2019

- Established treatment for children with severe challenging behaviour

- Treatments for SIB should be rehabilitative in nature, including interventions to reduce SIB and develop adaptive skills

Protective equipment can reduce the risk of physical injury associated with SIB & provide an opportunity to develop replacement behaviours and adaptive skills

Iwata et al., 1990; Reed et al., 2013

When should protective equipment be used?

A risk assessment should be conducted by a BC or OT to determine whether the risk-benefit ratio warrants the use of protective equipment

Self-Injury Trauma (SIT) Scale

Part I: General Description and Summary of Healed Injuries

Part II: Measurement of Surface Trauma

Part III: Scoring Summary

When should protective equipment be used?

Iwata et al., 1990; Reed et al., 2013

Self-Injury Trauma (SIT) Scale

Part III: scoring summary

Low risk→ generally don't require protective equipment

Moderate risk→ may benefit, consider medical history

High risk→ would probably benefit from some form of protective equipment

THE SELF-INJURY TRAUMA (SIT) SCALE

Patient:_____ Examiner:_____ Date:_____

PART I. GENERAL DESCRIPTION AND SUMMARY OF HEALED INJURIES

Check each type of self-injurious behavior exhibited by the patient. Next, note any physical evidence of healed injuries (scars, permanent disfigurement, missing body parts), along with the specific site.

Self-Injurious Behaviors:

___ Forceful contact with head or face
___ Forceful contact with other body part
___ Scratching, picking, rubbing skin
___ Biting
___ Eye gouging
___ Ingestion of inedible materials (pica)
___ Vomiting or rumination
___ Air swallowing (aerophagia)
___ Hair pulling (trichotillomania)
___ Other:_____

Healed Injuries:

1 _____
2 _____
3 _____
4 _____
5 _____

PART II. MEASUREMENT OF SURFACE TRAUMA

For each area of the body containing a current (unhealed) injury, identify the location and number of wounds, and note the type and the severity of the worst wound at that particular location.

Number: Score:
1)--One wound
2)--Two-four wounds
3)--Five or more wounds

Type: Abrasion or Laceration (AL): A break in the skin, either superficial or deep, caused by tearing, biting, excessive rubbing, or contact with a sharp object.

Contusion (CT): A distinct area marked by abnormal discoloration or swelling, with or without tissue rupture, caused by forceful contact.

Severity: Score AL as:
1)--Area is red or irritated, with only spotted breaks in the skin.
2)--Break in the skin is distinct but superficial; no avulsion.
3)--Break in the skin is deep or extensive, or avulsion is present.

Score CT as:
1)--Local swelling only or discoloration without swelling.
2)--Extensive swelling.
3)--Disfigurement or tissue rupture.

(scoring chart on next page)

PART II (CONTINUED)

LOCATION		NUMBER	TYPE	SEVERITY	COMMENT
Head:	Scalp	1 2 3	AL CT	1 2 3	
	Ear L/R	1 2 3	AL CT	1 2 3	
	Eye L/R	1 2 3	AL CT	1 2 3	
	Eye Area L/R	1 2 3	AL CT	1 2 3	
	Face	1 2 3	AL CT	1 2 3	
	Nose	1 2 3	AL CT	1 2 3	
	Lips/Tongue	1 2 3	AL CT	1 2 3	
	Neck/Throat	1 2 3	AL CT	1 2 3	
Upper Torso:	Shoulder L/R	1 2 3	AL CT	1 2 3	
	Chest/Stomach	1 2 3	AL CT	1 2 3	
	Back	1 2 3	AL CT	1 2 3	
Lower Torso:	Abdomen/Pelvis	1 2 3	AL CT	1 2 3	
	Hips/Buttocks	1 2 3	AL CT	1 2 3	
	Genitalia	1 2 3	CL CT	1 2 3	
	Rectum	1 2 3	AL CT	1 2 3	
Extremities:	Upper Arm/Elbow L/R	1 2 3	AL CT	1 2 3	
	Lower Arm/Wrist L/R	1 2 3	AL CT	1 2 3	
	Hand/Finger L/R	1 2 3	AL CT	1 2 3	
	Upper Leg/Knee L/R	1 2 3	AL CT	1 2 3	
	Lower Leg/Ankle L/R	1 2 3	AL CT	1 2 3	
	Foot/Toe L/R	1 2 3	AL CT	1 2 3	

PART III. SCORING SUMMARY

A. Number Index (NI)

From Part II, add all of the scores under the Number column and enter the total here:____

NI Score		Part II Total
(circle) 0	→	No injuries
1	→	1 - 4
2	→	5 - 8
3	→	9 - 12
4	→	13 - 16
5	→	17 or more

B. Severity Index (SI)

From Part II, enter the frequency of scores from the Severity Column: 1:____; 2:____; 3:____

SI Score		Severity Scores from Part II
(circle) 0	→	No injuries
1	→	All severity scores are 1's
2	→	One 2; No 3's
3	→	Two or more 2's; No 3's
4	→	No more than one 3
5	→	Two or more 3's

C. Estimate of Current Risk Based on Location and Severity

☐	LOW →	No injuries or: Any AL-1, CT-1, or AL-2 except near eyes
☐	MODERATE →	Any AL-2 near eyes, Any CT-2 except on head
☐	HIGH →	Any CT-2 on head, Any AL-3 or CT-3

Dorsey et al., 1982; Yang, 2003; Axelrod, 1987; Sturmey, 2018

Benefits & Potential Risks

Benefits

- protect the individual/ others from harm
- active component of behavioural intervention to reduce SIB over time

Potential Risks

- positive reinforcement for SIB when used incorrectly
- stigmatizing
- may restrict participation in educational and social activities (but so can SIB)
- may be a form of restraint
- self-restraint may emerge

Before using protective equipment...

Have a plan.

Before using protective equipment...

What kind of protective equipment?

When will you put it on/take it off?

How long will it stay on for?

Who are you working with?

How do I know if it's reducing the SIB?

Who to work with when using protective equipment?

Behavioural Consultant

- No regulatory body for behavioural consultants - varied levels of training
- A Board-certified Beahvioural Analyst (BCBA), has graduate level certification in behaviour analysis

Occupational Therapist

- Registered with the College of Occupational Therapists of British Columbia

Protective Equipment Application

Child A - Head Hitting Behaviour

20th hit in 1min

↓

Helmet application:

10s & folded hands

↓

Remove protective equipment

Child B - Severe Head Banging

2nd hit in 10s

↓

Helmet application:

1 minute of calm behaviour

↓

Remove protective equipment

Is the Protective Equipment Sufficiently Protecting the Individual?

Reed et al., 2013

Repeat SIT scale (or other self-injury scale) for assessment of injuries

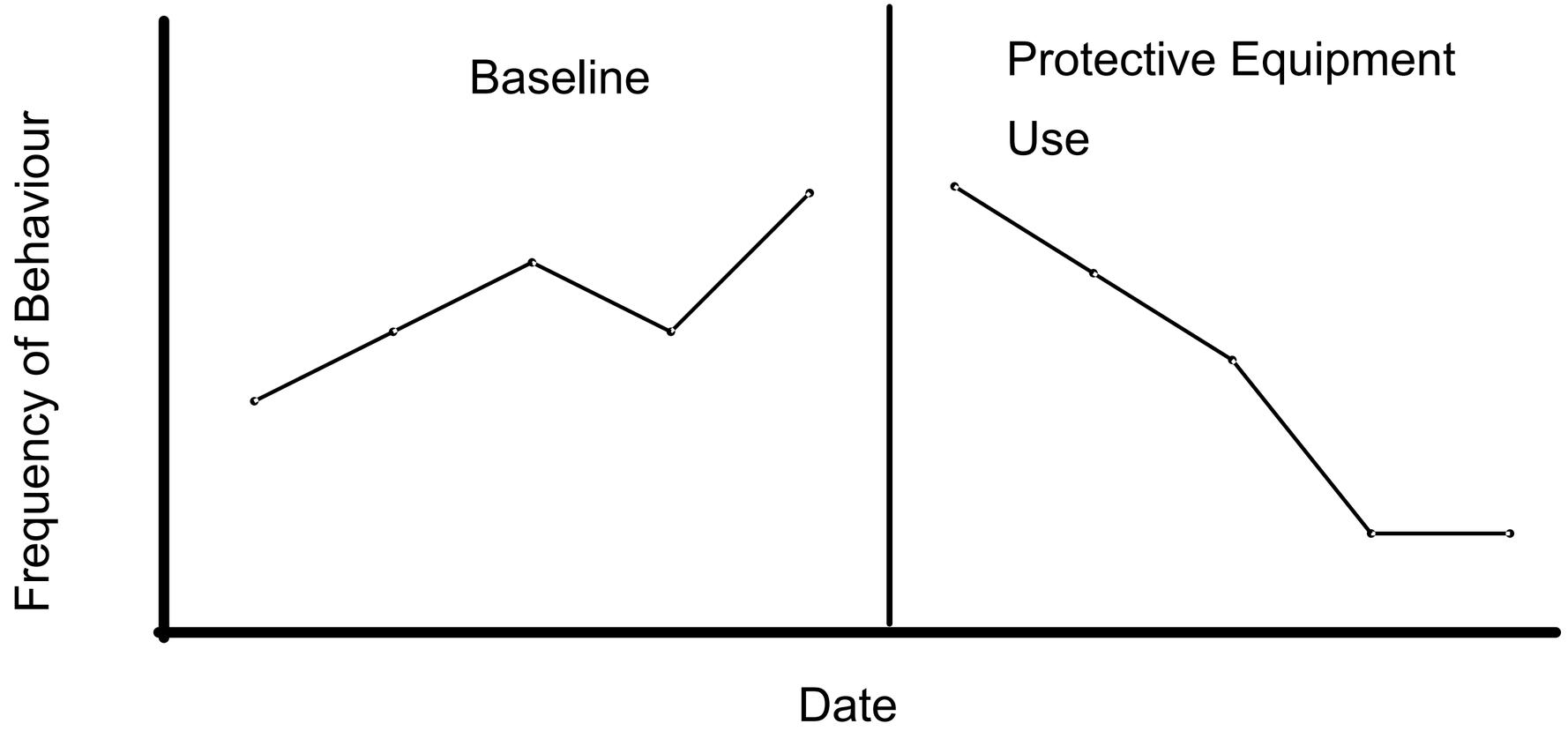
Monitor and document the status of existing or new injuries

New or worsening injuries

Modify type or criteria for use of protective equipment

Cooper et al., 2007; Busch et al., 2019

Is the protective equipment helping to reduce the SIB?



Part 2: Medication

Hollander et al., 2003

When should medication be considered?

- History of SIB across multiple settings, that has not responded to behavioural interventions

- SIB is interfering with ability to participate in school and family life

When should medication be considered?

Medications have risks and benefits

RISKS

- Medications will not cure autism
- Medicine may not help every child
- Your child may have side effects
- Medicine can cost a lot

BENEFITS

- Your child might be less irritable
- Challenging behaviours may improve
- Your child may function better at home, school, and in the community
- You and your child might sleep better

Aman et al., 2009; Frazier, 2012

Medication & Behavioural Intervention

Challenging behavior may benefit a multi-faceted treatment approach

+

Considerations when starting a new medication

- Not every medication works for everyone
- Some medications take time to start working
- May need to gradually increase dose for maximum benefit
- Most important target symptom for your child and family may change over time

Pharmacogenomics & Genecept

Pharmacogenomics

The study of how genes affect a person's response to drugs

Dangor, 2019; McMahon et al., 2019; Genecept Physician Brochure, 2017

Pharmacogenomics & Genecept

Cost: $495

- Identifies genetic variants that affect drug metabolism
- Evidence to support widespread use of pharmacogenetic tests is inconclusive
- Decision-support tool to help inform medication selection and dosing decisions

Buccal Swab for Saliva Sample

Genetic Variant Testing

Personalized medicine?

Nestler 2013; Nestler et al., 2009

Drug terminology

Tolerance

The diminishing effect of a drug over time with repeated use

Dependence

An adaptive state associated with withdrawal when a drug is abruptly stopped

Addiction

A disorder characterized by persistent use of a drug despite negative consequences

Side Effect

An effect that is secondary to the one intended

Medications for SIB?

- No medication specifically indicated for SIB
- Evidence for atypical antipsychotics to treat irritability in ASD (which includes SIB as one component)
- Aim with medication is to target other conditions which maintain SIB or increase SIB frequency/intensity

Targeting Co-morbidities

1. Sleep
2. ADHD
3. Anxiety
4. Pain
5. Aggression/irritability

Rossignol & Frye, 2011; Cortesi et al., 2012; Relia & Ekambaram 2018

Targeting Co-morbidities

Sleep

Type of Medication	Target Behaviors	Possible Side Effects
Melatonin	Sleep problems	Nausea Dizziness Headache Hypothermia
Anti-depressants • Low dose Trazodone (Trazorel)	Sleep problems	Dizziness Sleepiness

Targeting Co-morbidities

RUPP, 2005; Ghuman et al., 2009; Mahajan et., 2012; Jaselskis et al., 1992; Scahill et al., 2015

ADHD

* in the adult population

Type of Medication	Target Behaviors	Possible Side Effects
Stimulants • Methylphenidate (Ritalin) • Mixed amphetamine salts (Adderall)	Hyperactivity Short attention span Impulsive behaviours	Trouble falling asleep Decreased appetite Irritability
Alpha Agonists • Clonidine (Catapres) • Guanfacine (Intuniv)	Hyperactivity Short attention span Impulsive behaviours Sleep problems	Sleepiness Irritability Low blood pressure*

Hollander et al., 2005; Nadeau et al., 2011

Targeting Co-morbidities

Anxiety

Type of Medication	Target Behaviors	Possible Side Effects
SSRIs • Fluoxetine (Prozac) • Sertraline (Zoloft) • Escitalopram (Cipralex)	Anxiety Depression Repeating thoughts Repeating behaviours	GI problems Headaches Trouble falling asleep Agitation Weight Gain

Targeting Co-morbidities

Pain

Type of Medication	Target Behaviors	Possible Side Effects
Pain Relievers • Acetaminophen (Tylenol) • Ibuprofen (Advil)	Untreated Pain causing SIB?	GI problems

The FLACC Pain Scale

Sometimes it is difficult to assess pain in children who are non-verbal. The FLACC Pain Scale is a system that can help parents and professionals assess pain levels in children who have limited or no expressive communication. The diagram shows the categories for scoring. Zero, one or two points are given to each of the five categories: Face, Legs, Activity, Cry and Consolability.

Interpreting the Behaviour Score
Each category is scored on the 0-2 scale, which results in a total score of 0-10

- 0 relaxed and comfortable
- 1-3 mild discomfort
- 4-6 moderate pain
- 7-10 severe discomfort of pain or both

Categories ▼	Score Zero ▼	Score One ▼	Score Two ▼
Face F	No particular expression or smile	Ocasional grimace or frown, withdrawn, disinterested	Frequent to constant quivering chin, clenched jaw
Legs L	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity A	Lying quietly, normal position moves easily	Squirming, shifting back and forth, tense	Arched, rigid or jerking
Cry C	No crying (awake or asleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
Consolability C	Content, relaxed	Reassured by occasional touching, hugging or being talked to, distactable	Difficult to console or comfort

If a child is showing these behaviours, it doesn't necessarily mean that they are in pain, as some of the behaviours measured by the FLACC scale can happen for other reasons. However, parents are advised to follow up high scores with a professional.

CEREBRA
Working wonders for children with brain conditions

REFERENCE Merkel, S.I., Voepel-Lewis, T. Shayevitz, J.R., and Malviya, S. (1997). The FLACC: A behavioural scale for scoring postoperative pain in young children. *Pediatric Nursing, 23(3), 293-297.*

Targeting Co-morbidities

Nikoo et al., 2015; Owen et al., 2009; Hollander et al., 2006; Jaselskis et al., 1992

Aggression/Irritability

Type of Medication	Target Behaviors	Possible Side Effects
Atypical Antipsychotics • Risperidone (Risperdal) • Aripiprazole (Abilify)	Irritability Aggression Sleep problems	Sleepiness Drooling Weight gain
Anticonvulsants/ Mood Stabilizers • Valproic Acid (Depakene)	Seizures Mood problems Agression	Sleepiness Nausea Vomiting
Glutamate Modulating Agents • N-acetylcysteine	Irritability Aggression	GI problems

Chun et al., 2016; Provincial Least Restraint Guideline, 2018

As Needed (PRN) Medications

Atypical Antipsychotics

- Quetiapine
- Risperidone

Sedating Agents

- Lorazepam (Ativan)*

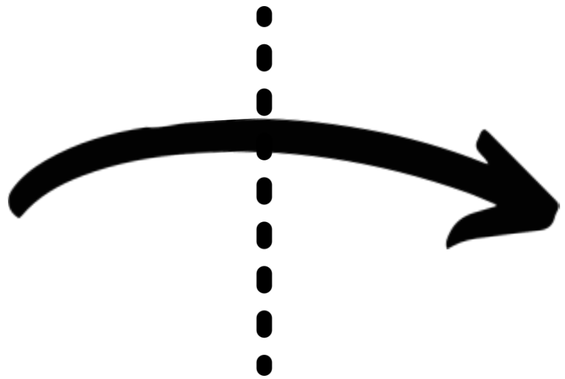
*Atypical medication responses (e.g. paradoxical) may be more common among children with ASD

Begin with low medication dosage and observe child's response

When should PRN Medications be used?

Behaviour Threshold

Normal Tantrum



Severe Tantrum

PRN medications may be helpful

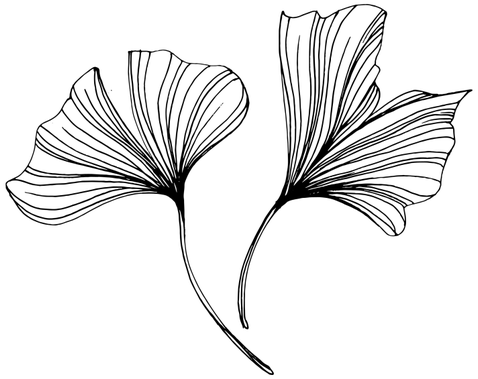
*If PRNs used >5 times/month, may need to adjust daily medication

Amminger et al., 2007; Hasanzadeh et al., 2012; Boonstra et al., 2015; Dosman et al., 2007

Supplements & Natural Treatments

1. Omega-3s: evidence of no benefit for irritability

2. Gingko extract: evidence of no benefit for irritability



3. GABA: no evidence of benefit beyond a placebo effect

4. Iron: may be indicated for sleep disturbances

5. CBD: to be discussed in another presentation!

Ip et al., 2009

Complementary and Alternative Medicine (CAM) Approaches

- Some CAM approaches are considered safe with appropriate monitoring, but these approaches may lack evidence

- If you do wish to try a CAM approach, it is recommended to:

1. Tell your healthcare provider
2. Test only 1 treatment at a time
3. Closely monitor and record outcomes

Resources for Families

Drug Interactions

www.drugs.com/drug_interactions

Medication Decision Aids

Autism Speaks: Medication Decision Aid

American Academy of Child and Adolescent Psychiatry (AACAP) Autism Parents' Medication Guide

Medication Monitoring & Safety

Autism Speaks: Autism and Medication: Safe and Careful Use

MyBooklet BC

www.mybookletbc.com

Questions?

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