

Module: Response Interruption/Redirection (RIR)

Steps for Implementation: Response Interruption/Redirection

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Response interruption/redirection (RIR) is an evidence-based practice used to decrease interfering behaviors, predominantly those that are repetitive, stereotypical, and self-injurious in nature. RIR is particularly useful with persistent interfering behaviors that occur in the absence of other people, in a number of different settings, and during a variety of tasks. These behaviors often are not maintained by attention or escape. Rather, they are more likely to be maintained by sensory reinforcement and are often resistant to intervention attempts (Fellner, Laroche, & Sulzer-Azaroff, 1984). RIR is particularly effective with sensory-maintained behaviors because teachers/practitioners interrupt learners from engaging in interfering behaviors and redirect them to more appropriate, alternative behaviors.

RIR contains two main components: (1) response interruption and (2) redirection. During the *response interruption* component of the intervention, teachers/practitioners stop the learner from engaging in the interfering behavior. This is usually accomplished by physically and/or verbally blocking a learner's attempts to engage in a stereotypical or repetitive behavior (e.g., teacher puts her hand at a short distance from the learner's mouth when he tries to engage in hand mouthing). *Redirection*, the second component of the intervention, focuses on prompting the learner to engage in a more appropriate, alternative behavior. Both of these components will be described further in this document along with the additional steps needed to use RIR effectively.

Step 1. Identifying the Interfering Behavior

In Step 1, teachers/practitioners identify an interfering behavior for a learner with ASD that they would like to decrease. In most cases, the interfering behavior is one that is interfering with learning and development (i.e., vocal stereotypy, pica, hand mouthing). Therefore, teachers/practitioners complete a high quality functional behavioral assessment (FBA) to identify the function of the interfering behavior and select an appropriate replacement behavior that can be taught as part of the redirection component of the intervention. **Please refer to *Functional Behavioral Assessment: Steps for Implementation* (National Professional Development Center on ASD, 2008) to acquire more in-depth information about the following FBA strategies.**

1. Teachers/practitioners identify the characteristics of the interfering behavior by using direct observation methods that generally include:
 - a. **A-B-C data charts.** A-B-C data charts help team members determine what happens right before the behavior (the antecedent), the behavior that occurs, and what happens directly after the behavior (the consequence). These data provide insight into why the learner may be engaging in a particular behavior.
 - b. **scatterplots.** Scatterplots help team members determine:

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- the possible functions of the behavior,
 - when the behavior is occurring, and
 - times of the day when an intervention might be implemented to reduce the interfering behavior.
2. Teachers/practitioners use direct assessment results to identify:
 - a. where the behavior is happening;
 - b. with whom the behavior is occurring;
 - c. when the behavior is happening;
 - d. activities during which the behavior occurs;
 - e. what other students are doing when the behavior starts;
 - f. what teachers/adults are doing when the behavior starts;
 - g. proximity of other students, teachers, and/or adults;
 - h. the noise level in the environment;
 - i. the number of individuals in the area;
 - j. other environmental conditions (e.g., lighting, door open/closed); and
 - k. the function of the behavior (i.e., *to get or obtain something*--obtaining internal stimulation, wanting something because it feels good, obtaining attention, obtaining activities or objects; or *to escape or avoid*--obtaining internal stimulation, not wanting something because it feels bad, escaping or avoiding attention, avoiding tasks or activities).
 3. Teachers/practitioners develop a **hypothesis statement** for the interfering behavior that includes:
 - a. the setting events (i.e., the environment or conditions in which the behavior occurs), immediate antecedents, and immediate consequences that surround the interfering behavior;
 - b. a restatement and refinement of the description of the interfering behavior that is occurring; and
 - c. the function the behavior serves (i.e., *get/obtain, escape/avoid*).
- EXAMPLE:* Michael repeats what is said to him and uses repetitive language to avoid being asked questions to which he does not know the answer.
- EXAMPLE:* Jenna wanders around in the dramatic play area during free play, picks dirt off the floor, and ingests it.
4. Teachers/practitioners identify a more appropriate, alternative behavior to take the place of the interfering behavior.

When identifying an alternative behavior, especially those that are maintained by **sensory reinforcement**, it is important to identify a behavior that provides the same sensory reinforcement to the learner with ASD, but in a more appropriate way. The following table

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provides examples of alternative behaviors that could be used to replace interfering behaviors using RIR.

Table 1. Alternative Behaviors to Replace Interfering Behaviors Using RIR

Interfering Behavior	Description	Possible Alternative Behaviors
Motor stereotypy	Movement of body parts that has no apparent function and movement that is not directed toward another individual (e.g., hand flapping, hand mouthing, putting fingers in ears, fanning/spreading fingers, positioning hands in front of face)	<ul style="list-style-type: none"> • Redirecting to put body parts somewhere other than mouth (e.g., on table, on lap). • Handing preferred toys/objects to learners one at a time • Providing an object to hold and/or play with (e.g., squishy ball, play dough) • Teaching learner to put hands together
Vocal stereotypy	Vocalizations that have no apparent function and are not directed toward another individual (e.g., echolalia, non-contextual laughing/giggling, non-contextual words/phrases, non-recognizable words)	<ul style="list-style-type: none"> • Teaching learner to say, “I don’t know” in response to a question • Teaching learners to use more appropriate language when they engage in vocal stereotypy (e.g., rather than giggling/laughing during social interventions, teach the learner to say, “Hello” to peers)
Self-injury	Any aggressive behavior that is directed towards oneself (e.g., hitting, scratching, biting)	<ul style="list-style-type: none"> • Providing preferred toys and/or objects • Having learner engage in heavy work (e.g., pulling wagons, heavy lifting)
Pica	Ingesting non-food items such as pencils, paint chips, dirt	<ul style="list-style-type: none"> • Providing a food item to eat (e.g., popcorn, raisins) • Having learner chew gum, on a rubber tube, etc.
Echolalia	Repeating words, phrases, or vocalizations	<ul style="list-style-type: none"> • Teaching learner to say, “I don’t know” in response to a question • Teaching learners to use more appropriate language when they engage in vocal stereotypy (e.g., rather than giggling/laughing during social interventions, teach the learner to say, “Hello” to peers)

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Step 2. Collecting Baseline Data

Once the target interfering behavior is identified, teachers/practitioners collect **baseline data** to determine how often the learner is currently engaging in the interfering behavior. Data also should be collected to evaluate how often the learner is currently using the identified alternative behavior.

1. Teachers/practitioners measure a learner's engagement in the interfering behavior before implementing RIR by collecting the following:
 - a. *Frequency data.* **Frequency data** measure how often a learner engages in a particular behavior. **Event sampling**, a method for data on behaviors that occur infrequently, is used to record every instance of the interfering behavior. Data are then used to identify a potential pattern of a learner's behavior over a period of days or weeks. Table 2 provides an example event sampling data collection sheet. A blank data sheet can be found in the Resources section of the module.

Table 2. Example Event Sampling Data Collection Sheet

Setting	Date	Hand flapping	Total	Before, during, or after RIR
<i>Free play</i>	<i>7/26/08</i>	<i>XXXXXXXXXX</i>	<i>10</i>	<i>Before</i>
<i>Outside</i>	<i>7/27/08</i>	<i>XXXXXXXXXXXX</i>	<i>12</i>	<i>Before</i>
<i>Lunch</i>	<i>7/28/08</i>	<i>XXXXXXXXXXXX</i>	<i>12</i>	<i>Before</i>
<i>Outside</i>	<i>7/29/08</i>	<i>XXXXXXXXXXXX</i>	<i>11</i>	<i>Before</i>
<i>Centers</i>	<i>7/30/08</i>	<i>XXXXXXX</i>	<i>7</i>	<i>During</i>
<i>Indep. Work time</i>	<i>7/31/08</i>	<i>XXXXX</i>	<i>5</i>	<i>During</i>
<i>1:1</i>	<i>8/01/08</i>	<i>XXX</i>	<i>3</i>	<i>During</i>

- b. *Interval data.* **Interval data** are collected when a behavior occurs very frequently. With this type of system, teachers/practitioners record whether the interfering behavior occurs at specific time intervals (e.g., every 30 seconds). Table 3 provides an example of an interval data collection sheet. A blank data sheet can be found in the Resources section of the module.

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Table 3. Example Interval Data Collection Sheet

Date	Hand flapping (every 30 seconds)															Total	Before, during, or after RIR
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
7/27/08	x			x					x	x	x		x	x	x	8	Before
7/28/08	x	x	x	x		x		x	x	x		x	x		x	11	Before
7/29/08	x	x	x	x	x		x	x		x		x	x	x		11	Before
7/30/08	x		x	x		x				x			x		x	7	During
7/31/08			x			x				x		x		x		5	During
8/01/08								x			x			x		3	During

- c. *Duration data.* **Duration data** are used to determine how long a learner engages in a particular behavior during a class, activity, or treatment session. For example, a teacher might collect data on how long a learner with ASD engages in hand mouthing during math class. Table 4 provides an example of a duration data collection sheet. A blank data sheet can be found in the Resources section of the module.

Table 4. Example Duration Data Collection Sheet for Hand Mouthing

Date	Activity	Start time	End Time	Total minutes	Before, during, or after RIR
7/26/08	English	9:00	9:15	15	Before
7/27/08	English	9:05	9:20	15	Before
7/28/08	Math	10:00	9:10	10	Before
7/29/08	Resource	11:15	11:27	12	Before
7/30/08	English	9:10	9:14	4	During
7/31/08	Math	10:15	10:20	5	During
8/01/08	Resource	11:05	11:10	5	During

Baseline data give teachers/practitioners a starting point from which they can evaluate whether the interfering behavior decreases as a result of RIR.

- Teachers/practitioners collect baseline data for a minimum of four days before implementing RIR.
- Teachers/practitioners collect baseline data in numerous settings and/or activities for four days in each setting/activity.

It often is useful to have more than one practitioner collect baseline data over the course of several days to compare findings. Also, by collecting data in multiple settings, teachers/practitioners can potentially recognize patterns of behavior. For example, does the learner engage in the interfering behavior more often in one setting than another? This kind of

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information helps teachers/practitioners identify activities or settings where RIR can be used to decrease the interfering behavior.

Step 3. Implementing RIR

In Step 3, teachers/practitioners implement the response interruption and redirection components of the intervention.

1. Teachers/practitioners praise learner's independent use of appropriate skills.

EXAMPLE: A learner with ASD who engages in frequent hand flapping during small group activities is observed putting his hands together rather than engaging in the interfering behavior. The learner's teacher gives him a sticker each time he uses the alternative behavior rather than flapping his hands during the activity.

2. When a learner begins to exhibit an interfering behavior, teachers/practitioners interrupt the learner's attempts by using:

- a. **physical blocking.** With this approach, teachers/practitioners physically prevent the learner from engaging in a motor stereotypy. Teachers/practitioners should use the least amount of physical assistance necessary to stop the learner from engaging in the interfering behavior. Often, only one to two seconds of physical contact is needed to stop a learner from using the behavior.

EXAMPLE: A teacher places her hand about an inch from a learner's mouth when he attempts to put his hand in his mouth

EXAMPLE: A teacher puts his hand on a learner's when she begins flapping her hands.

- b. **verbal blocking.** With this approach, teachers/practitioners prevent the learner from engaging in the interfering behavior by issuing a verbal directive.

EXAMPLE: A teacher says "No, don't" when a learner attempts to put her hand in her mouth.

3. *For learners who engage in vocal stereotypies,* teachers/practitioners redirect learners to use an identified alternative behavior by:

- a. saying the learner's name in a neutral tone of voice,
- b. establishing eye contact with the learner, and
- c. asking a social question to prompt the learner to use an alternative vocalization.

EXAMPLE: A learner begins squealing during one-to-one work time. The teacher asks the learner, "Where do you live?" or "What color is your shirt?"

4. *For learners who engage in motor stereotypies or self-injurious behaviors,* teachers/practitioners redirect them to engage in an identified alternative behavior by:

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- a. saying the learner's name in a neutral tone of voice,
- b. establishing eye contact with the learner, and
- c. using the system of least-to-most prompts to help the learner engage in the alternative behavior.

With this strategy, teachers/practitioners gradually provide increasing assistance to help a learner use an alternative behavior. The most intrusive level of **prompt** ensures that learners with ASD use the target skill successfully. **Please refer to *Least-to-Most Prompting: Steps for Implementation* (National Professional Development Center on ASD, 2008) for more information about least-to-most prompting.**

5. *For learners who engage in pica* (i.e., eating non-edible items), teachers/practitioners redirect them to engage in an identified alternative behavior by:
 - a. making a preferred food item (e.g., popcorn, goldfish crackers) freely available during times when pica is most prevalent,
 - b. saying the learner's name in a neutral tone of voice,
 - c. establishing eye contact with the learner, and
 - d. using the system of least-to-most prompts to help the learner engage in the alternative behavior.

EXAMPLE: A teacher places a bowl of goldfish crackers on a table in the dramatic play area during free play. When the learner with ASD attempts to pick up a piece of dirt off the floor and put it in her mouth, the teacher, says, "Molly, don't," and puts her hand in front of the learner's mouth to stop her from ingesting it. The teacher waits until eye contact has been established and then points to the bowl of goldfish on the table. When the learner with ASD tries to pick up another piece of dirt and put it in her mouth, the teacher gently guides her to the table and says, "Goldfish."

6. After redirecting the learner to the alternative behavior, teachers/practitioners require the learner to engage in the alternative behavior for a specified period of time.

Teachers/practitioners initially require the learner to use the alternative behavior for a minimal amount of time (e.g., 2 to 3 seconds). As learners begin to use the alternative behavior more often than the interfering behavior, teachers/practitioners increase the amount of time required of the learner to engage in the alternative behavior (e.g., 2 minutes, 10 minutes) before providing reinforcement.

7. Teachers/practitioners reinforce the learner's use of the alternative behavior.

Teachers/practitioners immediately provide **reinforcement** after the learner with ASD engages in the alternative behavior for the specified amount of time. The goal of reinforcement is to increase the likelihood that the learner with ASD will use the target skill again in the future. Therefore, selected **reinforcers** should be highly motivating to the learner with ASD. As learners begin to use the alternative behavior independently, reinforcement is gradually faded to

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allow for generalization and maintenance. **Please refer to *Positive reinforcement: Steps for Implementation* (National Professional Development Center on ASD, 2008) for more information about reinforcement.**

Step 4. Monitoring Learner Progress

1. Teachers/practitioners use progress monitoring data to evaluate whether the interfering behavior is decreasing as result of the intervention.
2. Teachers/practitioners use progress monitoring data to evaluate the learner's use of the alternative behavior in settings/activities where the interfering behavior typically occurs.

The same data collection sheets that were used to collect baseline data can be used to track learner progress.

3. Teachers/practitioners use progress monitoring data to adjust intervention strategies if the interfering behavior is not decreasing.

If the interfering behavior is not decreasing, teachers/practitioners must identify potential reasons for this. The following questions may be helpful during this problem-solving process.

- Is the interfering behavior well defined? That is, is it observable and measurable?
- Is RIR being implemented consistently by all staff?
- Does the alternative behavior provide the same sensory reinforcement as the interfering behavior?

References

Fellner, D.J., Laroche, M., & Sulzer-Azaroff, B. (1984). The effects of adding interruption to differential reinforcement on targeted and novel self-stimulatory behaviors. *Journal of Behavior, Therapy, and Experimental Psychiatry*, 15(4), 315-321.