**Autism In The Work Place**

**Response Interruption/Redirection**

**Overview**

Response interruption/redirection (RIR) is an evidence-based practice used to decrease interfering behaviors, predominantly those that are repetitive, stereotypical, and/or self-injurious. RIR is often implemented after a functional behavior assessment (FBA) has been conducted to identify the potential cause(s) of an interfering behavior. RIR is particularly useful with persistent, interfering behaviors that occur in the absence of other people, in different settings, and during a variety of tasks. RIR is particularly effective with sensory-maintained behaviors. These types of behaviors often are not reinforced by attention or escape. Instead, they are more likely maintained by sensory reinforcement, and often are resistant to intervention attempts (Fellner, Laroche, & Sulzer-Azaroff, 1984).

RIR contains two main components: (a) response interruption and (b) 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 lesson along with the additional steps needed to use RIR effectively.

**Response Blocking**

Response blocking is a common intervention strategy that is used to reduce interfering behaviors. With response blocking, teachers/practitioners prevent learners with ASD from engaging in interfering behaviors when they occur. Study findings indicate that blocking, when used by itself may induce aggression or lead to increases in other interfering behaviors (Lerman, Kelley, Vorndran, & Van Camp, 2003). For this reason, researchers have combined response blocking with redirection to create RIR. With this practice, teachers/ practitioners prompt learners to use alternative behaviors after preventing them from engaging in interfering behaviors (Hagopian & Adelinis, 2001).

For example, a teacher/practitioner may give a learner with ASD a small ball of silly putty to play with during English class as a replacement for squeezing his hands together. When the learner begins to engage in the interfering behavior, the teacher/practitioner may say, "No, don't," and then verbally prompt him to play with the silly putty instead of squeezing his hands together.

Research on RIR versus response blocking alone suggests that response blocking plus redirection is more effective at reducing persistent, interfering behaviors as well as preventing the occurrence of additional interfering behaviors such as aggression (Hagopian & Adelinis, 2001; McCord, Grosser, Iwata, & Powers, 2005).

**Why Use RIR?**

 RIR is particularly effective at reducing the occurrence of persistent, interfering behaviors such as pica, self-injurious behaviors, echolalia, and a variety of other stereotypical behaviors. These behaviors are common in learners with ASD, and generally inhibit learning and development, as well as social interactions with others (Ahearn, Clark, & MacDonald, 2007; Duker & Schaapveld, 1996). In fact, the presence of stereotypical and other repetitive behaviors is required for a diagnosis of autism (American Psychiatric Association [APA], 2000).

 In the following section, the various types of interfering behaviors that can be addressed using RIR are discussed in more detail. The behaviors that may be taught to take the place of these interfering behaviors also are described.

**Pica**

Pica refers to a pattern of eating nonfood items such as clay, dirt, sand, paint, and other nonedible materials. Often, alternative behaviors focus on having the learner eat or chew on an edible item, such as popcorn or gum. The key is to identify an alternative behavior that is reinforcing to the learner and is also appropriate for the age of the learner and the context where the interfering behavior occurs.

For example, it might not be appropriate for a learner with ASD who receives services in an inclusive setting to chew on a rubber tube during math class. In this case, the learner might be encouraged to chew gum because it is more socially appropriate for this environment.

The key is to identify a replacement behavior that (a) serves the same function as the interfering behavior, (b) is appropriate for the age of the learner and the setting where the behavior occurs, and (c) is socially valid. The goal is to ensure that the learner with ASD use the replacement behavior in place of the interfering behavior.

In the above example, the learner in the inclusive setting may continue to eat nonfood items during class even when he is encouraged to chew gum. If this is the case, chewing on a rubber tube might be more socially appropriate than eating the nonfood items.

**Echolalia**

**Echolalia involves repeating words, phrases, or vocalizations; it can be either immediate or delayed. With immediate echolalia, learners with ASD repeat what has just been said to them.**

**For example, a teacher/practitioner may say to a learner, "Do you want juice?" Rather than saying "yes" or "no," the learner would say, "Do you want juice?"**

**Delayed echolalia, on the other hand, refers to learners repeating words, phrases, or vocalizations that they heard in the past.** A common example is repeating words or phrases from favorite movies or TV shows.

When using RIR to reduce immediate echolalia, teachers/practitioners can teach learners to say, "I don't know" in response to a question. With delayed echolalia, teachers/practitioners can teach learners to say phrases or utterances that are more appropriate to the setting or context, such as saying "hello" to peers during small-group activities (Schreibman & Carr, 1978).

**Self-Injury**

Self-injurious behaviors include behaviors that result in physical injury to a learners own body and may include head banging, face slapping, and biting/scratching self. Common alternative behaviors for self-injury include having the learner engage in heavy lifting or work, as well as providing preferred materials during particular activities. For self-injurious behaviors, it may be necessary to block learners from hurting themselves by providing a physical barrier, such as an arm brace or padding on a desk. While such a physical barrier is helpful in preventing self-injury, it also is necessary to redirect learners to alternative behaviors that provide the same sensory reinforcement to reduce the occurrence of the interfering behavior.

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**Stereotypies**

**Motor Stereotypies**

Motor stereotypies include movement of body parts that have no apparent function and are not directed toward another individual. These behaviors include hand flapping, hand mouthing, and putting fingers in ears. Alternative behaviors for these types of stereotypies often include:

* redirecting learners to put body parts somewhere other than their mouths (e.g., on table, on lap);
* handing preferred toys/objects to learners one at a time;
* providing learners with an object to hold and/or play with (e.g., squishy ball, play dough); and
* teaching learners to put their hands together in their laps or with their fingers clasped.

**Vocal Stereotypies**

Vocal stereotypies are common stereotypical behaviors that can be addressed using RIR. Vocal stereotypies are defined as vocalizations that have no apparent function and are not directed toward another individual (e.g., noncontextual laughing/ giggling, noncontextual words/phrases, nonrecognizable words). For example, learners with ASD may giggle when it is not contextually appropriate (e.g., circle time, independent work time). With these types of stereotypies, teachers/practitioners can teach learners to:

* say, "I don't know" in response to a question;
* use more appropriate language when they engage in a vocal stereotypy (e.g., rather than giggling/laughing during circle time, teach the learner to sing along and do hand movements to a song); or
* answer common questions (Ahearn et al., 2007).

These types of alternative behaviors are thought to be appropriate for vocal stereotypies because teachers/practitioners cannot actually block learners from engaging in the interfering behaviors. Rather, they can ask questions or deliver directions that require a vocal response and are incompatible with the vocal stereotypy.

**Who Can Use RIR and Where Can It Be Used?**

RIR can be used by a variety of professionals, including general educators, special educators, related services personnel, therapists, and classroom assistants in a variety of educational and community-based environments. The studies that comprise the evidence base were conducted mainly in clinic-based settings or in one-to-one teaching sessions with learners with ASD. Although the research identified by the National Professional Development Center on ASD did not demonstrate the use of RIR in more naturalistic settings (e.g., during ongoing classroom routines and activities, in the home, in community-based settings), it might be effectively used during these types of activities as well.

**With What Ages Is RIR Most Effective?**

The evidence base demonstrates that RIR can be used effectively with learners ages 3 to 21 years, with the majority of studies showing effectiveness with elementary, middle, and high-school-aged learners with ASD. RIR is most often used with learners with ASD who exhibit severe interfering behaviors, particularly those that are repetitive and stereotypical in nature. The studies in the evidence base targeted off-task behavior as well as sustained engagement in vocal stereotypy and repetitive behaviors. Prompting and reinforcement also were used by researchers to teach more appropriate behaviors to take the place of the interfering behaviors displayed by learners with ASD.

**What Assessments Are Used with RIR?**

Two types of assessments are often used when implementing RIR: (a) functional behavior assessment (FBA) and (b) preference assessment. Each of these assessments is used in different ways to help reduce the occurrence of interfering behaviors in learners with ASD. The following sections describe each of these assessments and how they can be used when implementing RIR.

**Functional Behavior Assessment (FBA)**

Persistent, interfering behaviors can either be (a) socially reinforced or (b) sensory maintained. With socially reinforced behaviors, learners generally are motivated to get something or to escape/avoid something in the environment. For example, a learner might be trying to get attention from someone (e.g., reprimands, eye contact, help) or to acquire something (e.g., food, drink, toy, activity). Other learners may be trying to escape or avoid an activity or routine (e.g., delaying work, getting an easier task, avoiding interactions with others, or leaving an activity).

**EXAMPLE: Socially Reinforced Behavior**

After conducting an FBA, a teacher determines that a learner with ASD screams to escape activities with peers. To reduce the interfering behavior, the teacher may create a cue card that says, "Break, please." During small-group activities, the teacher observes the learner to watch for signals that he might start screaming. For example, the learner may start to squeal before screaming. When the learner begins to squeal, the teacher says, "No screaming," points to his cue card, and reads what it says, "Break, please." She then holds out her hand to prompt the learner to give her the card. The break card now serves as the alternative behavior to the squealing and addresses the function of the behavior (escape). Although the learner is still allowed to leave the activity, he does so in a more appropriate way.

Sensory-maintained behaviors often occur because they provide a pleasant physical sensation (Ahearn et al., 2007). For example, a learner with ASD might bang his head because he enjoys how it feels. Research suggests that these types of behaviors can be particularly challenging because they often occur in the absence or presence of other individuals, in a variety of settings, and during a variety of activities (Fellner et al., 1984).

When using RIR with sensory-maintained behaviors, the interruption component of the intervention is often viewed as something unpleasant that the learner with ASD tries to avoid. In this way, learners with ASD stop using particular behaviors because they don't want to experience the interruption and they get the same sensory reinforcement by using alternative behaviors such as chewing gum or playing with play dough (Duker & Schaapveld, 1996).

**EXAMPLE: Sensory Maintained Behavior**

A teacher conducts an FBA and determines that a learner's hand flapping is sensory maintained. She comes to this conclusion because she has noticed that the learner engages in this behavior during a variety of activities, including free play, circle time, centers, and outside on the playground. Also, the behavior does not appear to be socially reinforced because nothing seems to be maintaining the behavior other than the fact that it feels good to the learner**.**

The teacher prepares to implement RIR by identifying an alternative behavior that can be taught to the learner and take the place of the interfering behavior. She decides to give him a vibrating toy that is attached to his waist with a metal ring. When the learner starts to flap his hands, the teacher gently takes his hands and say, "No, don't." The teacher/practitioner then guides him to the vibrating toy, which he can turn on and hold in his hand during activities.

Because interfering behaviors can be either socially reinforced or sensory maintained, it is essential that teachers/practitioners identify what factors may be reinforcing a learner's use of the interfering behavior. Functional behavior assessment (FBA) is a key assessment used to identify the function of interfering behaviors. When conducting an FBA, teachers/practitioners use a variety of strategies (e.g., direct observation, parent interview) to gather information about what might be reinforcing a given behavior and causing a learner to use it during particular routines and/or activities.

Once the function of the interfering behavior has been identified, teachers/practitioners can determine appropriate, alternative behaviors that may be used to replace the interfering behavior. Alternative behaviors are taught during the redirection component of the intervention after teachers/practitioners block the learner from engaging in the interfering behavior. When implementing RIR, it is critical that teachers/practitioners identify alternative behaviors that provide learners with the same type of reinforcement that they received when engaging in the interfering behaviors. When this occurs, learners will be more motivated to use the alternative behaviors and the intervention will likely be more successful.

**Preference Assessment**

When using RIR to reduce persistent, interfering behaviors, it is essential that the stereotypical or repetitive behavior be replaced with an alternative behavior that meets the same function as the interfering behavior. For example, a learner may be taught to play with silly putty rather than flapping his hands during English. To make the intervention more successful and to promote a learner's use of an alternative behavior, teachers/practitioners should also focus on identifying preferred items and materials so that learners are motivated to use them rather than engaging in the interfering behavior (Favell, McGimsey, & Schell, 1982). To accomplish this, preference assessments may be conducted to identify highly preferred materials or items. These materials or items can then be used during the redirection component of the intervention to teach the learner an alternative behavior that provides the same reinforcement as the interfering behavior.

Duration-based preference assessments often are helpful in identifying alternative items that perform the same function as the interfering behavior. For example, teachers/practitioners provide continuous access to a particular item for approximately five minutes and record whether or not the learner is engaged with the item every 30 seconds. This process can be repeated with a variety of items until high-preference items are identified. Items are considered high-preference if learners are engaged with them during at least 75% of the 30-second intervals (Ahearn, Clark, DeBar,& Florentino, 2005).

**Examples of potential replacement items include:**

* sitting on a therapy ball
* squeezing foam blocks
* watching a plastic prism
* squeezing squeak toys
* chewing on rubber tubing/rings
* chewing gum
* playing with silly putty
* squeezing a squishy ball
* placing a weighted item (e.g., stuffed animal, ball) on a learner's legs
* holding a vibrating object

Once high-preference items have been identified, teachers/practitioners provide learners with access to these items for a specified period of time (e.g., 5 minutes) when they begin engaging in the interfering behaviors. For example, a teacher might block a learner from flicking his fingers and then redirect him to squeeze a squishy ball. Research has shown that this can drastically reduce the amount of time that learners with ASD engage in interfering behaviors, particularly those that are sensory-based (Ahearn et al., 2005). As the frequency of the interfering behavior decreases during these activities, teachers/practitioners can begin to limit learners' access to the sensory items over time.

**What Other Evidence-Based Practices May Be Used with RIR?**

RIR is often used in conjunction with other evidence-based practices such as stimulus control, reinforcement, and differential reinforcement to reduce the occurrence of persistent, interfering behaviors.

**Stimulus Control**

With stimulus control, teachers/practitioners use environmental and curricular modifications to prevent or reduce interfering behaviors. For example, a teacher/ practitioner may change features in the environment that are causing a learner to place his fingers in his ears (e.g., too much noise, bright lights). The teacher/practitioner then modifies the environment so that it is not as bright for the learner with ASD, for example. However, the teacher/practitioner also would use RIR if the learner began to use the interfering behavior despite the environmental modifications. For instance, when the learner begins to place his fingers in his ears, the teacher/practitioner would block his response (i.e., placing fingers in ears) and redirect him to use an alternative behavior.

**Reinforcement**

Reinforcement is used with RIR to reinforce learners' use of the identified alternative behavior during routines and activities where interfering behaviors typically occur. For example, a teacher/practitioner may praise a learner with ASD every minute when he sits on his carpet square during circle time without playing with his saliva. If the learner starts to put his hand near his mouth, the teacher/practitioner, or other staff, gently redirects him to play with a squishy ball instead. Reinforcement is used in conjunction with RIR to increase the occurrence of appropriate behaviors, as well as to decrease the frequency of interfering behaviors. For more information reinforcement please see the AIM lesson on [Reinforcement](http://www.autisminternetmodules.org/../mod_intro.php?mod_id=44).

**Prompting**

Prompting is another evidence-based practice that is used with RIR. With this practice, teachers/practitioners cue learners to use the alternative behavior if they do not do so independently. When prompting is used with RIR, teachers/practitioners block learners from engaging in interfering behaviors and then prompt them to use alternative behaviors. Teachers/practitioners may provide (a) verbal or written directions or (b) gestures (e.g., pointing) or physical guidance to assist the learner in using the alternative behavior. For example, a teacher/practitioner may block a learner with ASD from eating dirt off the floor and then point to a small bag of popcorn (gesture). The teacher/practitioner then reinforces the learner by offering praise when he begins eating the popcorn rather than the dirt. For more information on prompting, please see the AIM lesson on Prompting.

**Step-by-Step Instructions**

The author has identified four steps for implementing RIR. These include:

* Identifying the Interfering Behavior
* Collecting Baseline Data
* Implementing RIR, and
* Monitoring Learner Progress.

These steps are outlined in this section of the lesson.

**Step 1. Identifying the Interfering Behavior**

Teachers/practitioners identify an interfering behavior 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). 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.

**Teachers/practitioners identify the characteristics of the interfering behavior by using direct observation methods that generally include:**

*A-B-C data charts*. A-B-C data charts help 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 is engaging in a particular behavior.

*Scatterplots*. Scatterplots help determine:

* 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.

**Teachers/practitioners use direct assessment results to identify**:

* where the behavior is happening;
* with whom the behavior is occurring;
* when the behavior is happening;
* activities during which the behavior occurs;
* what other students are doing when the behavior starts;
* what teachers/adults are doing when the behavior starts;
* proximity of other students, teachers, and/or adults;
* the noise level in the environment;
* the number of individuals in the area;
* other environmental conditions (e.g., lighting, door open/closed); and
* 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--*obtaininginternal stimulation, not wanting something because it feels bad, escaping or avoiding attention, avoiding tasks or activities).

**Teachers/practitioners develop a hypothesis statement for the interfering behavior that includes:**

* the setting events (i.e., the environment or conditions in which the behavior occurs), immediate antecedents, and immediate consequences that surround the interfering behavior;
* a restatement and refinement of the description of the interfering behavior that is occurring; and
* the function that 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.



**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 table to the right provides examples of alternative behaviors that could be used to replace interfering behaviors using RIR.

**Step 2. Collecting Baseline Data**

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



**Teachers/practitioners measure a learner's engagement in the interfering behavior before implementing RIR by collecting the following:**

***Frequency data*.** Frequency data measure how often a learner engages in a particular behavior. Event sampling, a method for collecting 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. The table above provides an example event sampling data collection sheet. A [blank data sheet](http://www.autisminternetmodules.org/up_doc/DataSheetsRIR.pdf) may be found in the Lesson Documents section of the lesson.



***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). The table to the right provides an example of an interval data collection sheet. A [blank data sheet](http://www.autisminternetmodules.org/up_doc/DataSheetsRIR.pdf) may be found in the Lesson Documents section of the lesson.



***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. The table to the right provides an example of a duration data collection sheet. A [blank data sheet](http://www.autisminternetmodules.org/up_doc/DataSheetsRIR.pdf) may be found in the Lesson Documents section of the lesson.

**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 in another? This kind of information helps teachers/practitioners identify activities or settings where RIR can be used to decrease the interfering behavior.

**Step 3. Implementing RIR**

Teachers/practitioners implement the RIR components of the intervention.

**Teachers/practitioners praise learners' 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.

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

***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 1 to 2 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.

**V*erbal 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.

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

* saying the learner's name in a neutral tone of voice,
* establishing eye contact with the learner, and
* 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?"

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

* saying the learner's name in a neutral tone of voice,
* establishing eye contact with the learner, and
* 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.

***For learners who engage in pica (i.e., eating nonedible items), teachers/ practitioners redirect them to engage in an identified alternative behavior by:***

* making a preferred food item (e.g., popcorn, goldfish crackers) freely available during times when pica is most prevalent;
* saying the learner's name in a neutral tone of voice;
* establishing eye contact with the learner; and
* 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 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."

**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.

**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 length 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. As learners begin to use the alternative behavior independently, reinforcement is gradually faded to allow for generalization and maintenance.

**Step 4. Monitoring Learner Progress**

**Teachers/practitioners use progress monitoring data to evaluate whether the interfering behavior is decreasing as result of the intervention.**

**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 data collection sheets that were used to collect baseline data may be used to track learner progress.

**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. Seeking answers to 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?

**Case Study Examples**

This lesson provides two examples for implementing RIR.

 Conner is a 4-year-old with ASD who has begun eating dirt off the floor (pica) in a housekeeping center during free play.

 Elizabeth is a 14-year-old with ASD who has begun playing with her saliva at her desk during independent and large group activities.

 Follow these studies as they demonstrate how RIR is used to help these individuals with some behavioral changes.

**Conner**

**Case Study: Conner**

Conner is a 4-year-old with ASD who just started receiving services within an inclusive classroom. Recently, Conner has begun eating dirt off the floor (pica) in the housekeeping center during free play. His teacher, Ms. Mary, has tried to pull him away from the center, but he often resists and begins screaming. Conner's pica has become so problematic that Ms. Mary is not able to work on any goals during this time. For this reason, Ms. Mary has asked the autism support specialist, Ms. Young, for help.

After Ms. Mary explains the situation to Ms. Young, they decide to conduct a FBA to figure out why Conner is engaging in this behavior. Ms. Young decides to observe Conner over the next several days during free play. During these observations, Ms. Young collects ABC and frequency data to determine the potential causes of the interfering behavior as well as how often Conner is engaging in pica.

After the observation, Ms. Young and Ms. Mary determine that Conner is probably eating dirt off the floor because it makes him feel good in some way. Ms. Mary and Ms. Young also decide that Conner might be engaging in this behavior during free play because it is very unstructured and he may not know what else to do during this time. As a result of the FBA, Ms. Mary and Ms. Young decide that (a) the environment is too unstructured for Conner and (b) he needs to be taught a different behavior that serves the same sensory function to take the place of the pica.

To address this interfering behavior, Ms. Mary and Ms. Young plan to implement RIR while also restructuring the environment to ensure that Conner better understands the expectations of the situation. For example, they decide to incorporate highly preferred materials into different areas of the classroom so that Conner is more motivated to engage in these activities rather than the pica. Conner loves animals, trains, and the sensory table. As a prevention strategy, they plan to have all of these items available during free play. Classroom staff also identify an alternative behavior for Conner. Ms. Mary and Ms. Young decide to give Conner four goldfish crackers to eat to replace the pica.

To implement RIR, Ms. Mary and Ms. Young decide to physically block Conner from crouching on the floor to eat dirt. As he begins to crouch, Ms. Mary will say, "No, don't," and gently pull him up and give him the four goldfish crackers. Ms. Mary also will redirect Conner to one of his favorite activities, such as the sensory table. At their planning meeting, Ms. Mary and Ms. Young decide to start implement the intervention the next day.

During free play the next day, Ms. Mary closely watches Conner so that she can be present when he tries to eat dirt off the floor. Ms. Mary observes Conner as he walks around the room. He eventually walks over to the housekeeping area. Ms. Mary also walks over to this area and helps Conner get engaged with the dramatic play materials. She then watches Conner and waits to see if he begins using the interfering behavior. Mary also stays close to Conner so she is available to stop him before he starts to get down on the floor. After about 3 minutes, Conner looks down on the floor and begins to crouch down. Ms. Mary quickly walks over to Conner and prevents him from getting all the way down on the floor by saying, "No, don't," and gently pulling him up. She immediately provides him with the four goldfish crackers she has been carrying around in a small plastic bag. As Conner begins to eat them, she gently guides him to the sensory table, which is full of sand. Ms. Mary stays at this activity to help him start playing with the sand toys. After about 3 minutes, Ms. Mary slowly backs away from the table so that Conner can play independently. He stays at the table for about 3 more minutes before making his way back to the housekeeping area. Ms. Mary quickly makes her way over to this area so that she can repeat the intervention steps as needed. Conner engages in pica 3 more times during free play; however, he also plays with toys for the first time since he started school three weeks earlier.

Ms. Mary continues to implement the intervention as planned for the next several days. Over time, she begins to notice that Conner is eating dirt off the floor less often and is beginning to interact with classroom materials without adult assistance. As this happens, Ms. Mary and Ms. Young decide to slowly fade the goldfish by providing Conner with one fewer cracker each day. By the beginning of the next week, Conner only needs a verbal prompt (e.g., "Time for sand") when he enters the housekeeping area to redirect him from engaging in the pica behavior.

**Elizabeth**

**Case Study: Elizabeth**

Elizabeth is a 14-year-old learner with ASD who receives services within a self-contained autism classroom. In the past few weeks, Elizabeth has begun playing with her saliva on her desk when she is seated during independent work time and large group activities. Her teacher, Mr. Frank, has become concerned because this is all she does at these times. As a result, Elizabeth is not progressing on any of her goals when she is working independently or during large-group activities. To address this interfering behavior, Mr. Frank asks the autism specialist, Ms. Long, for help.

After talking with Ms. Long, they decide to conduct a functional behavior assessment (FBA) to figure out why Elizabeth is engaging in this behavior. During this time, they collected ABC data as well as frequency and duration data. After observing Elizabeth throughout the school day for several days, Ms. Long and Mr. Frank meet again. Based upon Ms. Long's observations and her discussion with Mr. Frank, they decide that Elizabeth is most likely engaging in the behavior during Mr. Frank's class because it provides her with a pleasant physical sensation. Mr. Frank and Ms. Long decide to implement RIR to try and reduce the occurrence of the saliva play.

When designing the intervention, their first step is to identify an alternative behavior. Because they have determined that the saliva play is sensory maintained, they must select a behavior that provides the same sensory reinforcement but is more appropriate to the situation. They decide to give Elizabeth an item that is similar in consistency to play with during independent and large group times. To identify the items, Mr. Frank and Ms. Long decide to conduct a preference assessment in which they will provide her with a variety of materials. Through this process, they will determine which items she likes the most. The identified item(s) will be used as the alternative behavior.

Next, Mr. Frank and Ms. Long decide how to stop Elizabeth from engaging in the behavior in the first place. They decide that they will need to find a way to prevent Elizabeth's saliva from reaching her desk. To accomplish this, they decide to use a tissue. Mr. Frank, or his classroom assistant, will place the tissue approximately two inches beneath Elizabeth's chin during independent work time when she begins to drool. Mr. Frank knows from her past behavior that she often sticks her bottom lip out when she is about to drool. When he notices this behavior, he will place the tissue underneath her chin to prevent the saliva from reaching the desk. He also will say, "Elizabeth, no drooling."

During the preference assessment, Mr. Frank and Ms. Long include a small container of cornstarch and water, play dough, and silly putty because they are similar in texture and consistency to the saliva. They let Elizabeth play with each material for approximately 5 minutes. At the end of the preference assessment, they determine that the preferred material is the cornstarch and water because Elizabeth played with it the most. After Mr. Frank and Ms. Long have identified how to block Elizabeth's saliva play as well as the alternative behavior, they decide to implement the intervention the next day.

Ms. Long comes to Mr. Frank's classroom the next day to help him implement the intervention. As Mr. Frank helps the other students get started on their work, Ms. Long sits with Elizabeth and helps her get started on her work. As a prevention strategy, Ms. Long also places the small bowl of cornstarch on Elizabeth's desk so that she is more motivated to play with it than drool. Once Elizabeth is engaged in the work activity, Ms. Long slides her chair away from Elizabeth's desk and waits to see if she starts drooling.

After about 5 minutes, Ms. Long notices that Elizabeth is putting her bottom lip out. As she does so, Ms. Long places the tissue approximately 2 inches underneath her chin and says, "Elizabeth, no drooling." Elizabeth begins to drool, and Ms. Long catches the saliva in the tissue. As Ms. Long is blocking Elizabeth's saliva from reaching the desk, she also nudges Elizabeth's hand toward the small container of cornstarch. When Elizabeth does not respond to this prompt, Ms. Long physically guides Elizabeth's hands to the container. As Elizabeth begins playing with the cornstarch and water, she stops drooling, and Ms. Long takes the tissue away. Elizabeth is allowed to have continual access to the cornstarch during this activity so that she is less likely to engage in the interfering behavior in the first place.

For the next few days, Mr. Frank continues to implement the intervention in the same manner. Over the course of the intervention, he notices that he only needs to block Elizabeth's saliva play every other day. As her saliva play decreases, Mr. Frank begins to fade her access to the cornstarch and begins to increase the work expectations for her during independent work time. The goal is to fade out the cornstarch completely so that Elizabeth is able to take part in the learning activities during independent work time without engaging in any saliva play.

**Summary**

* Response interruption/redirection (RIR) is an evidence-based practice used to decrease interfering behaviors, predominantly those that are repetitive, stereotypical, and/or self-injurious in nature.
* RIR often is implemented after an FBA has been conducted to identify the potential cause(s) of the interfering behavior.
* RIR is particularly useful with persistent, interfering behaviors that occur in the absence of other people, in different settings, and during a variety of tasks. Such behaviors often are not maintained by attention or escape. Instead, they are more likely maintained by sensory reinforcement and are often resistant to intervention attempts.
* RIR is particularly effective with sensory-maintained behaviors because teachers/practitioners interrupt learners from engaging in interfering behaviors and redirect them to use more appropriate, alternative behaviors.

**Citation and References**

Neitzel, J. (2010). Response interruption/redirection for children and youth with autism spectrum disorders: Online training lesson. (Chapel Hill, NC: National Professional Development Center on Autism Spectrum Disorders, FPG Child Development Institute, UNC-Chapel Hill). In Ohio Center for Autism and Low Incidence (OCALI), *Autism Internet Lessons,* www.autisminternetlessons.org. Columbus, OH: OCALI.

**References**

Ahearn, W. H., Clark, K. M., DeBar, R., & Florentino, C. (2005). On the role of preference in response competition. *Journal of Applied Behavior Analysis, 38*, 247-250.

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision). Washington, DC: American Psychiatric Association.

Ahearn, W. H., Clark, K. M., & MacDonald, P. F. (2007). Assessing and treating vocal stereotypy in children with autism. *Journal of Applied Behavior Analysis, 40*, 263-275.

Duker, P. C., & Schaapveld, M. (1996). Increasing on-task behavior through interruption-prompting. *Journal of Intellectual Disability Research, 40*(4), 291-297.

Favell, J. E., McGimsey, J. F., & Schell, R. M. (1982). Treatment of self-injury by providing alternate sensory activities. *Analysis and Intervention in Developmental Disabilities*, *2*, 83-104.

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.

Hagopian, L. P., & Adelinis, J. D. (2001). Response blocking with and without redirection for the treatment of pica. *Journal of Applied Behavior Analysis, 34*, 527-530.

Lerman, D. C., Kelley, M. E., Vorndran, C. M., & Van Camp, C. M. (2003). Collateral effects of response blocking during the treatment of stereotypic behavior. *Journal of Applied Behavior Analysis, 36*, 119-123.

McCord, B. E., Grosser, J. W., Iwata, B. A., & Powers, L. A. (2005). An analysis of response-blocking parameters in the prevention of pica. *Journal of Applied Behavior Analysis, 38*, 391-394.

Schreibman, L., & Carr, E. G. (1978). Elimination of echolalic responding to questions through the training of a generalized verbal response. *Journal of Applied Behavior Analysis, 11*, 453-463.

**Quiz**

* 1. Response interruption/redirection is an evidence-based practice that is used to:

Reduce persistent, interfering behaviors often exhibited by learners with ASD

Direct a learner to use a behavior that serves the function as the interfering behavior

Reinforce learners’ use of appropriate behaviors and skills

All of the above

* 1. Response interruption/redirection can be used effectively to address which types of behavior?

Self-injurious

Engagement

On-task

Stereotypical

Both self-injurious and stereotypical

All of the above

* 1. Before implementing response interruption/redirection strategies, teachers/practitioners should conduct a functional behavior assessment.

True

False

* 1. When implementing response interruption/redirection, blocking a learner from using an interfering behavior is sufficient to reduce the occurrence of the behavior.

True

False

* 1. Response interruption/redirection often is used in conjunction with other evidence-based practices.

True

False