**AFIRM**

Autism Focused Intervention
Resources & Modules

# Differential Reinforcement (DR)
# ---Step-by-Step Guide---

This practice guide outlines how to plan for, use, and monitor the practice of **Differential Reinforcement**.

Keep in mind that **Differential Reinforcement** can be used to decrease inappropriate behaviors and increase appropriate behaviors.

## BEFORE YOU START...

Each of the following points is important to address so that you can be sure the selected EBP is likely to address the learning needs of your student.

Have you found out more information about. . .?

☐ Established a goal or outcome that clearly states when the behavior will occur, what the target skill is, and how the team will know when the skill is mastered...

☐ Identifying evidence-based practices...

If the answer to any of these is "no," review the process of how to select an EBP.

For more information, visit:
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# Now you are ready to start...

## Step 1: Planning

The planning step explains initials steps and considerations involved when using DR as an intervention for a learner.

### 1.1  Identify and define interfering behavior through an FBA

To assist in identifying a behavior that interferes with learning and/or daily function, team members should complete a functional behavior assessment (FBA).

> *Note:*  Check out the module on FBA for more information about this specific process.

📄 *Use the FBA Sheet (ABC Chart) to determine the function of an interfering behavior.*

Team members should gather information from each other regarding the topography, frequency, intensity, location, and duration of the interfering behavior.

### 1.2  Select a differential reinforcement strategy

When deciding which differential reinforcement procedure to use, determine what the main goal is for the interfering behavior. If the main goal is to eliminate the behavior and not introduce a replacement, then choose DRO. If the main goal is to reduce the interfering behavior, then choose DRL. If the main goal is to substitute the interfering behavior with a more functional and appropriate behavior, then choose DRA or DRI.

- If using DRI, also select incompatible behavior.
- If using DRA, also select alternative behavior.

📄 *Use the DR Procedures Guide to select a procedure.*

### 1.3  Collect baseline data on interfering behavior

Collect data in a variety of settings and activities to determine how often the learner with ASD is using the interfering behavior.

Data sheets will help you collect data on the interfering behavior in order to determine if the trend is stable to begin using differential reinforcement.

📄 *Use the Frequency Data Sheet to collect the frequency of an interfering behavior.*

📄 *Use the Duration Data Sheet to collect the duration of an interfering behavior.*

📄 *Use the Partial Interval Data Sheet to collect data on an interfering behavior during intervals.*

### 1.4  Identify Reinforcers

If choosing a DRO or DRL strategy, the reinforcer should be of at least equal strength or motivating value at which is currently maintaining the interfering behavior.

If choosing a DRI or DRA strategy, the reinforcer should be the same type and/or equivalent to the reinforcement they received when engaging in the interfering behavior.

## Step 1: Planning (continued)

### 1.5  Determine schedule of reinforcement

The process for determining the schedule of reinforcement is different depending on the differential reinforcement procedure.
a.  Schedule of reinforcement for DRO
1.  Determine the average IRT from baseline data.
2.  Start with a slightly smaller interval than the average IRT for the initial DRO interval.
b.  Schedule of reinforcement for DRL
1.  Start the initial response criterion at the average occurrences from baseline.
2.  Response criterion will continue to decrease gradually until the learner is continually engaging in the interfering behavior at the predetermined, more appropriate rate.
c.  Schedule of reinforcement for DRI/DRA
1.  When first beginning to use a DRI or DRA procedure, use continuous reinforcement.
2.  Once the learner is successful, move to using an intermittent schedule and gradually thin the reinforcement schedule.

### 1.6  Prepare materials

Team members should make sure they have all materials needed for using differential reinforcement such as data collection sheets, timers, and reinforcers.
Team members also need to determine if additional materials such as a self-monitoring chart or visuals will be used when implemented differential reinforcement procedures.

## Step 2: Using

This section describes the process of implementing DR, including deliver reinforcers and addressing generalization.

### 2.1  Meet with the learner

*DRO - Differential Reinforcement of Other Behaviors*
Discuss the interfering behavior you want the learner to eliminate and explain how the learner can earn a reinforcer.
- Think about what tools you can use to help the learner understand what's being discussed at the meeting (e.g., pictures, video models).
- If other procedures will be used with DRO, introduce them to the learner.

## Step 2: Using (continued)

### 2.1  Meet with the learner (continued)

*DRL - Differential Reinforcement of Low Rates of Behavior*
> Discuss the interfering behavior you want the learner to reduce and explain how the learner can earn a reinforcer
> - Think about what tools you can use to help the learner understand what's being discussed at the meeting (e.g., pictures, video models).
> - If other procedures will be used with DRL, introduce them to the learner (e.g., self-monitoring chart).
> - Inform the learner about the number of instances allowed.

*DRI/DRA - Differential Reinforcement of Incompatible Behavior/Differential Reinforcement of Alternative Behavior*
> Discuss the replacement behavior (incompatible or alternative behavior) with the learner and explain how the learner can earn a reinforcer
> - Team members may also have to use an additional strategy such as functional communication training to teach the use of the replacement behavior.

### 2.2  Follow reinforcement schedule

*DRO - Differential Reinforcement of Other Behaviors*
- Deliver reinforcer if criterion is met.
- If interfering behavior occurs, reset timer or wait for next interval to try again.
- When the learner engages in the interfering behavior, inform the learner they did not earn the reinforcer and they can try again.
- To maintain the reinforcer as a motivator, make sure the learner does not have. access to the reinforcer outside of being used for the DRO procedure.
- As the learner makes progress, gradually increase the DRO interval.

*DRL - Differential Reinforcement of Low Rates of Behavior*
- At the end of the interval or session if the limit is met, deliver the reinforcer.
- If the limit is not met, withhold the reinforcer and provide feedback to the learner to help the learner monitor their rate of responding. Inform the learner they did not earn the reinforcer, but that they can try again.
- As the learner makes progress, gradually reduce the number of responses allowed per session or interval. If using interval DRL, team members can also increase the duration of the interval.

## Step 2: Using (continued)

### 2.2 Follow reinforcement schedule (continued)

*DRI/DRA - Differential Reinforcement of Incompatible Behavior/Differential Reinforcement of Alternative Behavior*
- If the interfering behavior occurs put the behavior on extinction or interrupt and redirect the learner to the replacement behavior.
- Deliver reinforcer when replacement behavior used and meets criterion
- If learner is successful with a continuous schedule of reinforcement, move onto an intermittent schedule.

### 2.3 Generalize procedure to other settings

When the interfering behavior is eliminated or predetermined criterion is met, team members should use DRO, DRL, DRI, or DRA procedures in additional settings or different times in the learner's natural environments.

Having different team members such as teachers, the speech pathologist, and paraprofessionals use the DRO, DRL, DRI, or DRA procedure can also help generalize the intervention effects.

## Step 3: Monitoring

The following process describes how interfering behaviors can be monitored and how this data can be used to guide further support of the learner.

### 3.1 Collect data on target behaviors

Use the same type of data collection and same data collection forms used in baseline.
- *Use the Frequency Data Sheet to collect the frequency of an interfering behavior.*
- *Use the Duration Data Sheet to collect the duration of an interfering behavior.*
- *Use the Partial Interval Data Sheet to collect data on an interfering behavior during intervals.*

### 3.2 Adjust reinforcement schedule based on performance criteria

- If using DRO, increase the interval as the learner is successful.
- If using DRL, decrease the number of allowances as the learner is successful.
- For DRI/DRA, if using a continuous schedule move to an intermittent schedule and continue to fade reinforcers.
- If the interfering behavior is not decreasing, team members can work together to determine potential solutions to issues.

## Step 3: Monitoring (continued)

### 3.3 Determine next steps based on learner progress

If the learner with ASD is showing progress, then continue to use differential reinforcement.

If the learner with ASD is not showing progress with differential reinforcement, ask yourself the following questions:

- Is the target skill or behavior well defined?
- Is the skill or behavior measurable and observable?
- If using DRI or DRA, does the incompatible/alternative behavior need to be taught?
- Was differential reinforcement used with fidelity?
- If using DRO, DRL, or DRI, is the reinforcer strong enough?
- If using DRA, does the reinforcer provide the same function as the interfering behavior?
- Have you tried adjusting the reinforcement schedule?
- Are all team members using differential reinforcement consistently?

If these issues have been addressed and the learner with ASD continues to not show progress, consider selecting a different evidence-based practice to use with the learner.