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Extinction (EXT)
---EBP Brief Packet---

This overview brief will support your use of the evidence-based practice: Extinction.

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Components of the EBP Brief Packet…

This evidence-based practice overview on Extinction includes the following components:

1. **Overview:** A quick summary of salient features of the practice, including what it is, who it can be used with, what skills it has been used with, and settings for instruction.
2. **Evidence-base:** The *EXT Evidence-base* details the NPDC criteria for inclusion as an evidence-based practice and the specific studies that meet the criteria for this practice.
3. **Step-by-Step Guide:** Use the *EXT Step-by-Step Practice Guide* as an outline for how to plan for, use, and monitor EXT. Each step includes a brief description as a helpful reminder while learning the process.
4. **Implementation Checklist:** Use the *EXT Implementation Checklist* to determine if the practice is being implemented as intended.
5. **Data Collection Sheets:** Use the data collection sheets as a method to collect and analyze data to determine if progress is being made for a learner with ASD.
6. **Tip Sheet for Professionals:** Use the *EXT Tip Sheet for Professionals* as a supplemental resource to help provide basic information about the practice to professionals working with the learner with ASD.
7. **Parent Guide:** Use the *EXT Parent Guide* to help parents or family members understand basic information about the practice being used with their child.
8. **Additional Resources:** Use the *Additional Resources* to learn more about the practice.
9. **CEC Standards:** A list of *CEC Standards* that apply specifically to EXT.
10. **Module References:** A list of numerical *References* utilized for the EXT module.

Suggested citation:

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Extinction (EXT)

What Is EXT?

Extinction is a behavioral procedure that results in the reduction or elimination of a behavior when an individual stops receiving reinforcement for engaging in that behavior.[1]

Combination with Other Procedures: Extinction's effectiveness is usually maximized when it is combined with other procedures, such as Antecedent-based Interventions or Differential Reinforcement of alternative (DRA) behaviors. Using extinction in combination with these procedures may also reduce the likelihood that the learner will experience some of the negative side effects that can be associated with extinction.

Evidence-base

Extinction meets the evidence-based practice criteria set by NPDC with 10 single case design studies. The practice has been effective with learners in preschool (3-5 years) to high school learners (15-22 years). Evidence-based practices (EBP) and studies included in the 2014 EBP report detailed how extinction can be used effectively to address: communication, behavior, school readiness, and adaptive outcomes.

How Is EXT Being Used?

Extinction can be used by a variety of professionals, including teachers, special educators, therapists, paraprofessionals, and early interventionists in educational and community-based environments. Parents and family members also can use extinction in the home.

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---Evidence-base for Extinction---

The National Professional Development Center on ASD has adopted the following criteria to determine if a practice is evidence-based. The EBP Report provides more information about the review process (Wong et al., 2014).

Efficacy must be established through high quality, peer-reviewed research in scientific journals using:

- randomized or quasi-experimental design studies (two high quality experimental or quasi-experimental group design studies),
- single-subject design studies (three different investigators or research groups must have conducted five high quality single subject design studies), or
- combination of evidence [one high quality randomized or quasi-experimental group design study and three high quality single subject design studies conducted by at least three different investigators or research groups (across the group and single subject design studies)].

--OVERVIEW--

Extinction is a behavioral procedure that results in the reduction or elimination of a behavior when an individual stops receiving reinforcement for engaging in that behavior.[1] Extinction meets the evidence-based practice criteria with 11 single case design studies. The practice has been effective with learners in preschool (3-5 years) to high school learners (15-22 years). Studies included in the 2014 EBP report detailed how extinction can be used effectively to address: communication, joint attention, school readiness, adaptive, and behavior outcomes.

In the table below, the outcomes identified by the evidence base are shown by age of participants.

Early Intervention (0-2)	Preschool (3-5)	Elementary (6-11)	Middle (12-14)	High (15-22)
No studies	Communication		Communication	Communication
	Behavior	Behavior	Behavior	Behavior
			School-Readiness	
	Adaptive	Adaptive		

Early intervention (0-2 years)

No studies

Preschool (3-5 years)

Gale, C. M., Eikeseth, S., & Rudrud, E. (2011). Functional assessment and behavioural intervention for eating difficulties in children with autism: A study conducted in the natural environment using parents and ABA tutors as therapists. *Journal of Autism and Developmental Disorders, 41*(10), 1383-1396. doi: 10.1007/s10803-010-1167-8

Kuhn, S. A. C., Lerman, D. C., Vorndran, C. M., & Addison, L. (2006). Analysis of factors that affect responding in a two-response chain in children with developmental disabilities. *Journal of Applied Behavior Analysis, 39*, 263-280. doi: 10.1901/jaba.2006.118-05

Valentino, A. L., Shillingsburg, M. A., Call, N. A., Burton, B., & Bowen, C. N. (2011). An investigation of extinction-induced vocalizations. *Behavior Modification, 35*, 284-298. doi: 10.1177/0145445511398412

Elementary (6-11 years)

*Grow, L. L., Kelley, M. E., Roane, H. S., & Shillingsburg, M. A. (2008). Utility of extinction - induced response variability for the selection of mands. *Journal of Applied Behavior Analysis, 41*(1), 15-24. doi: 10.1901/jaba.2008.41-15

*Hagopian, L. P., Kuhn, S. A. C., Long, E. S., & Rush, K. S. (2005). Schedule thinning following communication training: Using competing stimuli to enhance tolerance to decrements in reinforcer density. *Journal of Applied Behavior Analysis, 38*, 177-193. doi: 10.1901/jaba.2005.43-04

Patel, M. R., Piazza, C. C., Kelly, M. L., Ochsner, C. A., & Santana, C. M. (2001). Using a fading procedure to increase fluid consumption in a child with feeding problems. *Journal of Applied Behavior Analysis, 34*(3), 357-360. doi: 10.1901/jaba.2001.34-357

Thompson, R. H., Fisher, W. W., Piazza, C. C., & Kuhn, D. E. (1998). The evaluation and treatment of aggression maintained by attention and automatic reinforcement. *Journal of Applied Behavior Analysis, 31*(1), 103-116. doi: 10.1901/jaba.1998.31-103

Waters, M. B., Lerman, D. C., & Hovanetz, A. N. (2009). Separate and combined effects of visual schedules and extinction plus differential reinforcement on problem behavior occasioned by transitions. *Journal of Applied Behavior Analysis, 42*(2), 309-313. doi: 10.1901/jaba.2009.42-309

Middle (12-14 years)

Banda, D. R., McAfee, J. K., & Hart, S. L. (2009). Decreasing self-injurious behavior in a student with autism and tourette syndrome through positive attention and extinction. *Child & Family Behavior Therapy, 31*(2), 144-156. doi: 10.1080/07317100902910604

Middle (12-14 years continued)

*Hagopian, L. P., Kuhn, S. A. C., Long, E. S., & Rush, K. S. (2005). Schedule thinning following communication training: Using competing stimuli to enhance tolerance to decrements in reinforcer density. *Journal of Applied Behavior Analysis, 38*, 177-193. doi: 10.1901/jaba.2005.43-04

*Lalli, J. S., Casey, S., & Kates, K. (1995). Reducing escape behavior and increasing task completion with functional communication training, extinction and response chaining. *Journal of Applied Behavior Analysis, 28*(3), 261-268. doi: 10.1901/jaba.1995.28-261

Mace, F. C., Pratt, J. L., Prager, K. L., & Pritchard, D. (2011). An evaluation of three methods of saying "no" to avoid an escalating response class hierarchy. *Journal of Applied Behavior Analysis, 44*(1), 83-94. doi: 10.1901/jaba.2011.44-83

High (15-22 years)

*Grow, L. L., Kelley, M. E., Roane, H. S., & Shillingsburg, M. A. (2008). Utility of extinction - induced response variability for the selection of mands. *Journal of Applied Behavior Analysis, 41*(1), 15-24. doi: 10.1901/jaba.2008.41-15

*Lalli, J. S., Casey, S., & Kates, K. (1995). Reducing escape behavior and increasing task completion with functional communication training, extinction and response chaining. *Journal of Applied Behavior Analysis, 28*(3), 261-268. doi: 10.1901/jaba.1995.28-261

* Research which included participants in multiple age ranges.

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Extinction (EXT)
---Step-by-Step Guide---

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

Keep in mind that **EXT** can be used to decrease inappropriate behaviors and increase appropriate behaviors when combined with other evidence-based practices.

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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. . .?

- ☐ Establishing 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 additional evidence-based practices…

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

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Now you are ready to start…

Step 1: Planning

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

1.1 Conduct a Functional Behavior Assessment

Before implementing extinction, it is critically important to first determine the function of the interfering behavior and the maintaining consequence(s) by conducting a functional behavior assessment (FBA).

Note: Check out the FBA module for more information about Functional Behavior Assessment.

Use the Functional Behavior Assessment Sheet to help you determine the function of an interfering behavior.

1.2 Identify response interruption and redirection procedures

Extinction is not appropriate in all cases. Before implementing extinction, ask yourself the following questions:

- Is the behavior to be extinguished one that is likely to be imitated by other learners in the class?
- Does the student engage in self-injurious, destructive, or aggressive behavior when frustrated or angry?
- Are there times when it will not be feasible to withhold the maintaining consequence for the behavior?
- Are there people in the learner's environment who are not willing to implement extinction?

If the answer is "yes" to any of these questions, then extinction may not be appropriate in your situation. Please select a different evidence-based practice to use.

Use the EXT Considerations Sheet to determine if EXT is appropriate.

1.3 Select an appropriate replacement behavior

Teaching the learner a replacement behavior can increase the effectiveness of extinction and reduce the likelihood that some of the negative side effects of extinction, such as extinction-induced aggression, will occur. To be effective, it is important that the replacement behavior selected serve the same function as the interfering behavior.

Note: For more information, check out the Differential Reinforcement and Functional Communication modules.

Step 1: Planning (continued)

1.4 Select prompt type for replacement behavior

Prompts are used to teach the learner to use the replacement behavior. The prompting hierarchy includes physical prompts, modeling, gestural prompts, and verbal prompts, with physical prompts typically being the most intrusive and verbal prompts being the least intrusive. While the type of prompt used to teach the replacement behavior will vary depending on several variables, generally it is advisable to start with the most intrusive prompt that is appropriate and tolerated by the learner to minimize errors. Once the learner begins using the skill, the prompts should be faded to promote independence.

1.5 Identify additional EBPs

Depending on the interfering behavior, it may be necessary to use other evidence-based practices when implementing extinction. Some evidence-based practices that are appropriate include the following:

- Non-contingent reinforcement (NCR): Reinforcement is delivered at specified intervals independent of the learner's behavior.
- Response interruption/redirection: The behavior is interrupted and/or redirected to a more appropriate behavior.
- Visual supports: Cues that provide the leaner with information about a routine, activity, behavioral expectation, or skill demonstration.

Note: For more information, check out the Reinforcement, Response Interruption/Redirection, and Visual Supports modules.

1.6 Identify variables that affect EXT

Certain variables may influence how long it takes for an extinction procedure to cause a reduction in behavior. Identifying which variables are present in your own situation can provide some information about whether or not the behavior you are trying to reduce will be resistant to extinction. The variables to consider include:

- Reinforcement schedule: Behaviors that are reinforced on an intermittent basis (i.e., sometimes the behavior is reinforced and sometimes it is not reinforced) will usually take longer to extinguish than those that are reinforced on a continuous basis (i.e., every time the behavior occurs it is reinforced).
- Reinforcement history: Behaviors that have been reinforced for a long time will generally take longer to extinguish than those that have just started receiving reinforcement.
- Extinction history: The more times extinction is attempted unsuccessfully, the more resistant the behavior will be to extinction.
- Response effort: Interfering behaviors that require more effort to emit may be easier to extinguish than those that take less effort to emit.

Step 1: Planning (continued)

1.7 Create a crisis plan

Sometimes extinction will cause the learner to engage in aggressive behaviors towards him/herself or others. To prepare for the possibility of extinction-produced aggression, teachers should consider the following:

- Plan to have additional staff present to help if extinction-produced aggression occurs.
- Have a safe place ready to bring other students to if the target student becomes aggressive towards his or her peers. Examples include another classroom, a specials room, or the library.
- Ensure at least one person in the room is certified in crisis intervention.
- Identify which behaviors are not acceptable or that pose a safety threat, and stop the extinction procedure if these behaviors occur.

1.8 Identify train team members and others

When implementing extinction, it is very important that reinforcement for the interfering behavior is withheld from everyone in the learner's environment. The following is a list of people who may need to be taught how to implement the extinction procedure:

- Teachers, including special education, general education, physical education, and specials teachers (e.g., music, library, computer, etc.)
- Related service personnel, including speech, occupational, and physical therapists
- Other staff, including lunchroom workers, custodians, and others
- Paraprofessionals
- Peers

Use the EXT Planning Worksheet to help you plan for using extinction.

Step 2: Using

This section describes the process of implementing EXT by withholding the consequences that are maintaining the interfering behavior and prompting the use of the replacement behavior.

2.1 Describe the intervention plan to the learner, if appropriate

If the learner is verbal and able to understand the intervention plan, including the extinction procedure and any other EBPs identified, sometimes it is helpful to describe this plan to the learner. Doing so may increase the effectiveness of the intervention.

2.2 Consistently withhold all reinforcers and maintaining reinforcers

For extinction to be effective, it is important to withhold all sources of reinforcement for the interfering behavior. This means that all maintaining consequences identified through an FBA will need to be consistently withheld by all adults and peers in the learner's environment.

Step 2: Using (continued)

2.3 Prompt and reinforce the use of the replacement behavior

Use the prompt that was selected in Step 2 to prompt the use of the replacement behavior and provide reinforcement by giving the learner the consequence that was requested. For example, if the replacement behavior is raising a hand to request attention, then provide the learner with attention when he or she raises a hand.

Note: For more information on the different types of prompts and how to use them, see the Prompting module.

2.4 Gradually fade the use of prompts

After the learner begins to use the replacement behavior consistently, it is important to fade the use of prompts to promote independence. When fading prompts, continue to prompt the learner using the next to least intrusive prompt on the prompting hierarchy. While there is no set amount of time that should pass before a prompt is faded, it is important to fade prompts gradually.

Note: For more information on time delay and fading prompts, see the Prompting and Time Delay modules.

2.5 Expect extinction bursts, but do not reinforcethem

Extinction bursts are an increase in the frequency, intensity, and/or duration of a behavior following the implementation of an extinction procedure. They occur very soon after an extinction procedure is implemented and they are a sign that the function of the behavior was correctly identified. When extinction bursts occur, it is VERY important not to reinforce them. By continuing to withhold the reinforcement that is maintaining the behavior, the learner will eventually realize that the behavior no longer results in reinforcement and he or she will stop engaging in the behavior.

Step 3: Monitoring

The following process describes how the use of EXT can be monitored and how to determine next steps based on the data.

3.1 Collect and analyze data

Collect and analyze the following data to determine if the learner is making progress:

- dimensions of the interfering behavior, including frequency, duration, and/or intensity
- use of the replacement behavior, including the prompting level needed

Use the EXT Behavior Data Collection Form to collect the frequency, duration, and intensity of behaviors.

Step 3: Monitoring (continued)

3.2 Monitor the learner for signs of spontaneous recovery

Spontaneous recovery is the resurgence of an interfering behavior after the behavior has decreased or stopped occurring altogether. Similar to an extinction burst, the interfering behavior occurs even though it is not being reinforced, although the frequency, duration, and intensity of the behavior are usually much lower during spontaneous recovery. Additionally, these behaviors are also typically short-lived, as long as the extinction procedure remains in effect.

3.3 Continue to reinforce the use of the replacement behavior

In order to ensure the replacement behavior maintains over time, it is important to continue to reinforce the replacement behavior when the learner uses it; however, when the learner is using the replacement behavior independently, a delay to reinforcement can be introduced to teach the learner to wait. When introducing the delay to reinforcement, it is important to gradually increase the delay in order to decrease the possibility that the learner will engage in the interfering behavior again.

3.4 Determine next steps based on the learner's progress

Collecting data will help team members determine if a learner is making progress and reducing the use of the identified interfering behavior. If a learner is making progress based upon data collected, team members should continue to use the selected strategies.

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

- Is the behavior well defined?
- Is the behavior measurable and observable?
- Did a functional behavior assessment (FBA) identify all functions and maintaining consequences of the behavior?
- Are the EBP strategies addressing the function of the interfering behavior?
- Are all adults and peers in the learner's environment withholding reinforcement for the interfering behaviors?
- Are team members providing the learner with reinforcement for engaging in the replacement behavior?
- Does the function of the replacement behavior match the function of the interfering behavior?

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 with ASD.

Extinction (EXT)
---Implementation Checklist---

Before you start:

Have you...

- ☐ Identified the behavior?
- ☐ Collected baseline data through direct observation?
- ☐ 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.

If the answer to any of these is "no", refer to the "Selecting EBPs" section on the website.

Observation	1	2	3	4
Date				
Observer's Initials				
Step 1: Planning				
1.1 Conduct a functional behavior assessment				
1.2 Determine if EXT is appropriate				
1.3 Select an appropriate replacement behavior				
1.4 Select prompt for the replacement behavior				
1.5 Identify additional evidence-based practices				
1.6 Identify variables that may affect EXT				
1.7 Create and have a crisis plan in place in the event of learner aggression				
1.8 Identify and train team members and others				
Step 2: Using				
2.1 Describe the plan to the learner, if appropriate				
2.2 Consistently withhold reinforcers and maintaining consequences				
2.3 Prompt and reinforce use of the replacement behavior				
2.4 Gradually fade prompts				
2.5 Expect extinction burst, but do not reinforce them				
Step 3: Monitoring				
3.1 Collect and analyze data on interfering behavior and prompting				
3.2 Look for signs of spontaneous recovery				
3.3 Continue to reinforce use of the replacement behavior				
3.4 Determine next steps based on learner progress				

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---Functional Behavior Assessment---

Learner's Name: _____ Date/Time: _____

Observer(s): _____

Interfering Behavior: _____

_____

A-B-C Data Chart:

In the table below, record your observations

	Setting	Antecedent	Behavior	Consequence
Date: Time:				
Date: Time:				
Date: Time:				
Date: Time:				
Date: Time:				
Date: Time:				
Date: Time:				
Date: Time:				
Date: Time:				
Date: Time:				

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---EXT Considerations---

Extinction is not appropriate in all cases. Before implementing extinction, ask yourself the following questions. If you answered "yes" to any of these questions then extinction may not be appropriate in your situation. Please select a different evidence-based practice to use.

Question	Consideration
Is the behavior to be extinguished one that is likely to be imitated by other learners in the class?	When an extinction procedure is implemented, the behavior will usually get worse before it gets better. In cases where the behavior is imitated by others, this may mean that others will engage in the behavior more frequently as well, thus intensifying the situation.
Does the student engage in self-injurious, destructive, or aggressive behavior when frustrated or angry?	Extinction, particularly when used alone, is not recommended in instances where the learner may engage in behavior that is harmful to self or others.
Are there times when it will not be feasible to withhold the maintaining consequence for the behavior?	For extinction to be effective, it is imperative that reinforcement (i.e., the consequence maintaining the behavior) be withheld at all times.
Are there people in the learner's environment who are not willing to implement extinction?	Because reinforcement needs to be withheld at all times, this also means that it needs to be withheld from every person in the learner's environment.

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---EXT Planning Worksheet---

Learner's Name: _____ Date/Time: _____

Observer(s): _____

Interfering Behavior: _____

_____

Conduct a FBA and identify the function of behavior:

- ☐ Escape
- ☐ Access to a tangible/activity
- ☐ Access to attention
- ☐ Sensory/Automatic reinforcement

Maintaining consequence(s): _____

_____

_____

Determine if EXT is appropriate:

If you answered "yes" to any of these questions then extinction may not be appropriate in your situation. Please select a different evidence-based practice to use.

Question	Yes	No
Is the behavior to be extinguished one that is likely to be imitated by other learners in the class?	☐	☐
Does the student engage in self-injurious, destructive, or aggressive behavior when frustrated or angry?	☐	☐
Are there times when it will not be feasible to withhold the maintaining consequence for the behavior?	☐	☐
Are there people in the learner's environment who are not willing to implement extinction?	☐	☐

Select replacement behavior(s): _____

_____

_____

Continue →

Select prompt:

When teaching the learner to use the replacement behavior, it is generally advisable to start with the most intrusive prompt to minimize errors. However, there are times when the most intrusive prompt is not appropriate. To determine what level of prompting to begin with, ask yourself the following questions. If you answered yes for any of the following questions, start with the prompt that is the next lowest on the prompting hierarchy.

Prompt	Question	Yes	No
☐ Physical	Is the replacement behavior a verbal response in the form of spoken language?	☐	☐
	Does the learner engage in interfering behavior when physically prompted?	☐	☐
☐ Model	Does the learner lack imitation skills?	☐	☐
☐ Gestural			
☐ Verbal			

Identify additional evidence-based practices:

☐ Non-contingent reinforcement (NCR; R+)
☐ Response Interruption/Redirection (RIR)
☐ Visual supports (VS)
☐ Other: _____

Identify variables affecting EXT:

If you answered yes for any of the following questions, you may need to use extinction for a longer period of time before the interfering behavior is reduced or eliminated.

Question	Yes	No
Has the behavior been reinforced on an intermittent basis (i.e., sometimes the behavior is reinforced and sometimes it is not reinforced)?	☐	☐
Has the behavior has been reinforced for a long time (e.g., months or years)?	☐	☐
Has extinction been attempted unsuccessfully in the past for this behavior?	☐	☐
Is the behavior relatively easy for the learner to emit?	☐	☐

Continue →

Create a plan for aggressive behavior:

Task	Date completed
Identify additional staff that are able to be present if extinction-produced aggression occurs.	
Have a safe place ready to bring other students if the target student becomes aggressive towards his or her peers (e.g., another classroom, a specials room, the library, etc.).	
Ensure at least one person in the room is certified in crisis intervention.	
Identify which behaviors constitute stopping the extinction procedure. These are behaviors that are not acceptable or that pose a safety threat.	

Identify and train team others:

Review the following list and check if any of these individuals currently provide reinforcement for the interfering behavior. If so, they will need to be taught how to implement the extinction procedure, including how to reinforce the replacement behavior and how to implement other evidence-based practices that may be used in conjunction with extinction.

Teachers:
- ☐ Special education
- ☐ General education
- ☐ Physical education
- ☐ Specials (e.g., music, library, computer, etc.)
- ☐ Other: _____

☐ Paraprofessionals/Teaching assistants

☐ Peers

Related service personnel:
- ☐ Speech therapist
- ☐ Occupational therapist
- ☐ Physical therapist
- ☐ Other: _____

Other staff:
- ☐ Lunchroom workers
- ☐ Custodians
- ☐ Other: _____

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---Behavior Data Collection---

Learner's Name: ________________ Date/Time: ______________

Observer(s): ______________________________________

Interfering Behavior: ______________________________________

____

Replacement Behavior: ______________________________________

Frequency, Duration, and/or Intensity Data Collection:

Each time the behavior occurs, enter the date and place a check mark under "Frequency." If taking duration data, record how long the behavior occurs under "Duration." For intensity, circle a number that corresponds to the intensity level of the behavior. Also, check 'Yes' to indicate if reinforcement (R+) was withheld and if the learner used the replacement behavior (RB). Circle the prompt that was used to encourage the learner to use the replacement behavior.

Date	Frequency	Duration	Intensity	Withheld R+	RB	Prompt Level
			3 2 1	☐ Yes	☐ Yes	P M V G I
			3 2 1	☐ Yes	☐ Yes	P M V G I
			3 2 1	☐ Yes	☐ Yes	P M V G I
			3 2 1	☐ Yes	☐ Yes	P M V G I
			3 2 1	☐ Yes	☐ Yes	P M V G I
			3 2 1	☐ Yes	☐ Yes	P M V G I
			3 2 1	☐ Yes	☐ Yes	P M V G I
			3 2 1	☐ Yes	☐ Yes	P M V G I
			3 2 1	☐ Yes	☐ Yes	P M V G I

Prompt Key:
V = Verbal Prompt; G = Gestural Prompt; M = Model; P = Physical Prompt; I = Independently

Intensity Scale Key:
3 = behavior is so severe that it significantly interferes with teaching and learning; the teacher is unable to deliver instruction due to the behavior and/or the behavior results in harm to self or others
2 = the behavior is distracting to others but the teacher is still able to deliver instruction
1 = the behavior has a minimal effect on learning and isn't distracting to others

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Extinction (EXT)
---Professional's Guide---

Extinction

Extinction …

- Is an evidence-based practice for children and youth with autism spectrum disorder (ASD) from 3-22 years old that can be implemented in multiple settings.
- Involves the following steps:
  - identify an interfering behavior
  - conduct a functional behavior assessment (FBA) to determine the function of the interfering behavior and the maintaining consequences
  - consistently withhold the consequence that is maintaining the interfering behavior

Why Use?

- EXT is designed to decrease or eliminate interfering behaviors.
- Team members can use extinction in conjunction with other evidence-based practices to teach learners a replacement behavior to obtain desired attention, objects, or activities in a more socially acceptable manner.
- EXT is cost-effective, efficient, easy to implement, and non-intrusive.

Outcomes

- The evidence – base for EXT supports the use of this practice to address the outcomes below:

Early Intervention (0-2)	Preschool (3-5)	Elementary (6-11)	Middle (12-14)	High (15-22)
No studies	Communication		Communication	Communication
	Behavior	Behavior	Behavior	Behavior
			School-Readiness	
	Adaptive	Adaptive		

TIPS:

- Conduct a functional behavior assessment (FBA) to identify the function of the identified interfering behavior and the consequences that are maintaining it.
- Select a replacement behavior to teach the learner using additional evidence-based practices.
- Withhold the consequences maintaining the interfering behavior and provide reinforcement for the alternative behavior.

Extinction (EXT)
---Professional's Guide---

STEPS FOR IMPLEMENTING

1. Plan

- Conduct a functional behavior assessment
- Determine if EXT is appropriate
- Select an appropriate replacement behavior
- Select a prompt for the replacement behavior
- Identify additional evidence-based practices
- Identify variables that may affect EXT
- Create and have a crisis plan in place in the event of learner aggression
- Identify and train team members and other

2. Use

- Describe the plan to the learner, if appropriate
- Consistently withhold reinforcers and maintaining consequences
- Prompt and reinforce use of the replacement behavior
- Gradually fade prompts
- Expect extinction burst, but do not reinforce

3. Monitor

- Collect and analyze data on interfering behavior and prompting
- Look for signs of spontaneous recovery
- Continue reinforce use of the replacement behavior
- Determine next steps based on learner progress

Extinction

This tip sheet was designed as a supplemental resource to help provide basic information about the practice.

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Extinction (EXT)
---Parent's Guide---

This parent introduction to **Extinction** was designed as a supplemental resource to help answer basic questions about this practice.

To find out more about how **Extinction** is used with your child, speak with:

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For more information visit:
www.afirm.fpg.unc.edu

This introduction provides basic information about EXT.

What is EXT?

- Extinction is an evidence-based practice for children and youth with autism spectrum disorder (ASD) from 3-22 years old.
- EXT involves (a) identifying an interfering behavior (e.g., a behavior that interferes with the learner's ability to interact and learn), (b) determining why the interfering behavior is occurring, and (c) consistently withholding any attention, object, or activity that the learner is trying to obtain when he or she engages in the interfering behavior.

Why use EXT with my child?

- EXT can be used to decrease or eliminate interfering behaviors and, when used with other evidence-based practices, can be an effective way to teach learners how to obtain desired attention, objects, or activities in a more socially acceptable manner.
- Research studies have shown that extinction has been used effectively with preschool, elementary, middle, and high school learners to address outcomes related to communication, behavior, school readiness, and adaptive skills.

What activities can I do at home?

- When your child engages in an interfering behavior, think of the events that happened immediately before and after the behavior occurred to try to determine why the child engaged in that behavior and what may be causing the behavior to reoccur in the future.
- Teach your child an appropriate behavior that would help him or her gain access to the same attention, object, or activity that he or she was trying to gain access to by engaging in the interfering behavior.
- Remember to praise your child and provide reinforcement when he or she engages in the more appropriate behavior. For example, if your child asks for a toy (appropriate behavior) rather than hitting to gain access to the toy (interfering behavior), then provide your child with the toy to reinforce the use of the appropriate behavior.

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Autism Focused Intervention Resources & Modules

Check out these resources to support your use of Extinction.

For more information visit:
www.afirm.fpg.unc.edu

---Additional Resources---

Articles:

Bishop, M. R., Kenzer, A. L., Coffman, C. M., Tarbox, C. M., Tarbox, J., & Lanagan, T. M. (2013). Using stimulus fading without escape extinction to increase compliance with toothbrushing in children with autism. *Research in Autism Spectrum Disorders, 7*(6), 680-686. doi:10.1016/j.rasd.2013.02.004

Bui, L. T., Moore, D. W., & Anderson, A. (2013;2014;). Using escape extinction and reinforcement to increase eating in a young child with autism. *Behaviour Change, 30*(1), 48-55. doi:10.1017/bec.2013.5

MacDonald, J., Ahearn, W., Parry-Cruwys, D., & Bancroft, S. (2013). Persistence during extinction: Examining the effects of continuous and intermittent reinforcement on problem behavior. *Journal of Applied Behavior Analysis, 46*(1), 333-338. doi:10.1002/jaba.3

Tereshko, L., & Sottolano, D. (2017). The effects of an escape extinction procedure using protective equipment on self-injurious behavior. *Behavioral Interventions, 32*(2), 152-159. doi:10.1002/bin.1475

Weber, J., & Gutierrez, A. (2015). A treatment package without escape extinction to address food selectivity. *Journal of Visualized Experiments, 2015*(102), e52898. doi:10.3791/52898

Wolff, J. J., Hupp, S. C., & Symons, F. J. (2013). Avoidance extinction as treatment for compulsive and ritual behavior in autism. *Journal of Autism and Developmental Disorders, 43*(7), 1741-1746. doi:10.1007/s10803-012-1721-7

Book:

Tarbox, J., & Bermudex, T. L. (2017). *Treating feeding challenges in autism: Turning the tables on mealtime.* London: Elsevier/Academic Press

Website:

Educate Autism. (2017). *Extinction Procedures*. Retrieved January 4, 2018, from http://www.educateautism.com/applied-behaviour-analysis/extinction-procedure-aba.html

Extinction
CEC Standards

The CEC Standards that apply to all 27 evidence-based practices can be found on our website at: http://afirm.fpg.unc.edu/learn-afirm

Below are CEC Standards that apply specifically to Extinction (EXT) module.

Standard	Description
Initial Preparation Standard 2: Learning Environments	
ISCI 2 S10	Use effective and varied behavior management strategies
Initial Preparation Standard 4: Assessment	
DDA4 S2	Develop strategies for monitoring and analyzing challenging behavior and its communicative intent
DDA4 S3	Conduct functional behavior assessments that lead to development of behavior support plans
Initial Preparation Standard 5: Instructional Planning & Strategies	
DDA5 S5	Consistent use of proactive strategies and positive behavioral supports
Initial Preparation Standard 7: Collaboration	
ISCI 7 S9	Model techniques and coach others in the use of instructional methods and accommodations

Standard	Description
Advanced Preparation Standard 1: Assessment	
SEDAS1.S7	Conduct functional behavioral assessments (FBA) to determine what initiates and maintains a challenging/interfering behavior

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---Module References---

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2. Grow, L. L., Kelley, M. E., Roane, H. S., & Shillingsburg, M. A. (2008). Utility of extinction-induced response variability for the selection of mands. *Journal of Applied Behavior Analysis, 41*(1), 15-24. doi: 10.1901/jaba.2008.41-15
3. Waters, M. B., Lerman, D. C., & Hovanetz, A. N. (2009). Separate and combined effects of visual schedules and extinction plus differential reinforcement on problem behavior occasioned by transitions. *Journal of Applied Behavior Analysis, 42*(2), 309-313. doi: 10.1901/jaba.2009.42-309
4. Lalli, J. S., Casey, S., & Kates, K. (1995). Reducing escape behavior and increasing task completion with functional communication training, extinction and response chaining. *Journal of Applied Behavior Analysis, 28*(3), 261-268. doi: 10.1901/jaba.1995.28-261
5. Patel, M. R., Piazza, C. C., Kelly, M. L., Ochsner, C. A., & Santana, C. M. (2001). Using a fading procedure to increase fluid consumption in a child with feeding problems. *Journal of Applied Behavior Analysis, 34*(3), 357-360. doi: 10.1901/jaba.2001.34-357
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8. Wong, C., Odom, S. L., Hume, K. Cox, A. W., Fettig, A., Kucharczyk, S., Schultz, T. R. (2014). Evidence-based practices for children, youth, and young adults with autism spectrum disorder. Chapel Hill: The University of North Carolina, Frank Porter Graham Child Development Institute, Autism Evidence-Based Practice Review Group. http://autismpdc.fpg.unc.edu/sites/autismpdc.fpg.unc.edu/files/imce/documents/2014-EBP-Report.pdf
9. Hanley, G. P., Iwata, B. A., & Thompson, R. H. (2001). Reinforcement schedule thinning following treatment with functional communication training. *Journal of Applied Behavior Analysis, 34*, 17-38.