

Autism Focused Intervention Resources & Modules



UNC Frank Porter Graham Child Development Institute Autism Focused Intervention Resources & Modules Sam, A., & AFIRM Team, Updated 2024







# **OVERVIEW OF CONTENT**

- **1. Table of TD Contents:** This list details the specific TD resources that apply to Time Delay.
- **2. What is TD:** A quick summary of salient features of Time Delay, including what it is, who it can be used with, what skills it has been used with, and settings for instruction.
- **3. Evidence-base:** The evidence-base details the National Clearinghouse on Autism Evidence and Practice (NCAEP) criteria for inclusion as an evidence-based practice and the specific studies that meet the criteria for Time Delay.
- **4. Planning Checklist:** This checklist details the steps for planning for Time Delay, including what prerequisite learning of practices are needed, collecting baseline data of the interfering behavior if needed, and what materials/resources are needed.
- **5. Other Resources:** Other resources may include decision trees, checklists, and/or template forms that will support the use of Time Delay.
- **6. Step-by-Step Guide:** Use this guide as an outline for how to plan for, use, and monitor Time Delay. Each step includes a brief description as a helpful reminder while learning the process.
- **7. Implementation Checklist:** Use this checklist to determine if Time Delay are being implemented as intended.
- **8. Monitoring Progress Checklist:** Use this form as a method for collecting and analyzing data to determine if the learner on the spectrum is making progress towards the interfering behavior.
- **9. Tip Sheet for Professionals:** Use this tip sheet, intended for professionals working with learners on the spectrum, as a supplemental resource to help provide basic information about Time Delay.
- **10. Parent Guide:** Use this guide intended for parents or family members of learners on the spectrum to help them understand basic information about Time Delay and how it is being used with their child.
- **11. Additional Resources:** This list provides additional information for learning more about Time Delay as well as resources.
- 12. CEC Standards: This list details the specific CEC standards that apply to Time Delay.
- **13. Glossary:** This glossary contains key terms that apply specifically to Time Delay.
- **14. References:** This list details the specific references used for developing this TD module in numerical order.







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# TIME DELAY

#### WHAT IS TD?

AFIRM

Learners with on the spectrum often struggle with generalizing target skills and behaviors. Learners may become dependent on prompts from adults and/or peers to use a target skill or behavior.<sup>1-2</sup> Time delay can be used to prevent dependence on prompts.<sup>2</sup>

Time delay is a response prompting procedure that systematically fades prompts during instructional activities.<sup>2</sup> Time delay is a foundational practice that is used with other evidencebased practices (prompting and reinforcement). When using time delay, adults provide a controlling prompt (prompt which ensures learner will use the target skill) before learner responds, which reduces errors and increases reinforcement opportunities.<sup>3-6</sup>

#### **EVIDENCE-BASE:**

Based upon the 2020 systematic review conducted by the National Clearinghouse on Autism Evidence and Practice (NCAEP), Time Delay is a foundational intervention that meets the evidence-based practice criteria with 31 single case design studies. Time Delay has been effective for early intervention (0-2 years), preschoolers (3-5 years), elementary school learners (6-11 years), middle school learners (12-14 years), high schoolers (15-18 years), and young adults (19-22 years) on the spectrum. Studies included the 2020 EBP report (Steinbrenner et al., 2020) detail how Time Delay can be used to effectively address the following outcomes for a target goal/behavior/skill: academic/pre-academic, adaptive/self-help, behavior, cognitive, communication, joint attention, motor, play, school readiness, social, and vocational.

#### **HOW IS TD BEING USED?**

Time Delay 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 Time Delay in the home.

#### **Suggested Citation:**

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## Time Delay g.unc.edu/

# **EVIDENCE-BASE**

The National Clearinghouse on Autism Evidence and Practice has adopted the following criteria to determine if a practice is evidence-based. The 2020 EBP report (Steinbrenner et al., 2020) provides more information about the systematic review process.

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

- At least 2 randomized or quasi-experimental group design studies, or
- At least 5 single subject/case design studies, or a
- Combination of evidence of 1 randomized or quasi-experimental group design study and 3 single subject/case design studies

#### **OVERVIEW:**

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

Age	Academic	Adaptive	Behavior	Cognitive	Communication	Joint Attention	Motor	Play	School readiness	Social	Vocational
0-2						Yes				Yes	
3-5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
6-11	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
12-14	Yes	Yes			Yes					Yes	Yes
15-18		Yes							Yes		Yes
19-22	Yes	Yes			Yes				Yes		Yes



#### **EARLY INTERVENTION (0-2 YEARS):**

Krstovska-Guerrero, I., & Jones, E. A. (2016). Social-communication intervention for toddlers with Autism Spectrum Disorder: Eye gaze in the context of requesting and joint attention. Journal of Developmental and Physical Disabilities, 28(2), 289-316. https://doi.org/10.1007/s10882-015-9466-9

Muzammal, M. S., & Jones, E. A. (2016). Social-communication intervention for toddlers with autism spectrum disorder: Effects on initiating joint attention and interactions with mother. Journal of Developmental and Physical Disabilities, 29, 203-221. https://doi.org/10.1007/s10882-016-9519-8

#### PRESCHOOL (3-5 YEARS):

- \*Akmanoglu, N., Kurt, O., & Kapan, A. (2015). Comparison of simultaneous prompting and constant time delay procedures in teaching children with autism the responses to questions about personal information. Educational Sciences: Theory and Practice, 15(3), 723-737. https://doi.org/10.12738/estp.2015.3.2654
- \*Ingvarsson, E. T., & Hollobaugh, T. (2010). Acquisition of intraverbal behavior: Teaching children with autism to mand for answers to questions. Journal of Applied Behavior Analysis, 43(1), 43847. https://doi.org/10.1901/jaba.2010.43-1
- \*Leung, J. P. (1994). Teaching spontaneous requests to children with autism using a time delay procedure with multicomponent toys. Journal of Behavioral Education, 4(1), 21-31. https://doi.org/10.1007/BF01560506
- Lorah, E., Tincani, M., Dodge, J., Gilroy, S., Hickey, A., & Hantula, D. (2013). Evaluating picture exchange and the iPad as a speech generating device to teach communication to young children with Autism. Journal of Developmental & Physical Disabilities, 25(6), 637-649. https://doi.org/10.1007/s10882-013-9337-1
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- Rogers, L., Hemmeter, M. L., & Wolery, M. (2010). Using a constant time delay procedure to teach foundational swimming skills to children with autism. Topics in Early Childhood Special Education, 30(2), 102-111. https://doi.org/10.1177/0271121410369708
- \*Schrandt, J. A., Townsend, D. B., & Poulson, C. L. (2009). Teaching empathy skills to children with autism. Journal of Applied Behavior Analysis, 42(1), 17-32. https://doi.org/10.1901/jaba.2009.42-17
- Silbaugh, B. C., Falcomata, T. S., & Ferguson, R. H. (2018). Effects of a lag schedule of reinforcement with progressive time delay on topographical mand variability in children with autism. Developmental Neurorehabilitation, 21(3), 166-177. https://doi.org/10.1080/17518423.2017.1369190
- \*Taylor, B. A., & Harris, S. L. (1995). Teaching children with autism to seek information: Acquisition of novel information and generalization of responding. Journal of Applied Behavior Analysis, 28(1), 3-14. https://doi.org/ 10.1901/jaba.1995.28-3
- Venn, M. L., Wolery, M., Werts, M. G., Morris, A., DeCesare, L. D., & Cuffs, M. S. (1993). Embedding instruction in art activities to teach preschoolers with disabilities to imitate their peers. Early Childhood Research Quarterly, 8(3), 277-294. https://doi.org/10.1016/S0885-2006(05)80068-7

## **ELEMENTARY SCHOOL (6-11 YEARS):**

- \*Akmanoglu, N., Kurt, O., & Kapan, A. (2015). Comparison of simultaneous prompting and constant time delay procedures in teaching children with autism the responses to questions about personal information. Educational Sciences: Theory and Practice, 15(3), 723-737. https://doi.org/10.12738/estp.2015.3.2654
- Alison, C., Root, J. R., Browder, D. M., & Wood, L. (2017). Technology-based shared story reading for students with autism who are English-language learners. Journal of Special Education Technology, 32(2), 91-101. https://doi.org/10.1177/0162643417690606
- Browder, D. M., Root, J. R., Wood, L., & Allison, C. (2017). Effects of a story-mapping procedure using the iPad on the comprehension of narrative texts by students with autism spectrum disorder. Focus on Autism Other Developmental Disabilities, 32(4), 243-255. https://doi.org/10.1177/1088357615611387







- \*Carlile, K. A., Reeve, S. A., Reeve, K. F., & DeBar, R. M. (2013). Using activity schedules on the iPod touch to teach leisure skills to children with autism. *Education & Treatment of Children, 36*(2), 33-57. https://doi.org/10.1353/etc.2013.0015
- Cihak, D. F. (2007). Teaching students with autism to read pictures. *Research in Autism Spectrum Disorders, 1*(4), 318-329. https://doi.org/10.1016/j.rasd.2006.12.002
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- \*Ingvarsson, E. T., & Hollobaugh, T. (2010). Acquisition of intraverbal behavior: Teaching children with autism to mand for answers to questions. *Journal of Applied Behavior Analysis, 43*(1), 43847. https://doi.org/10.1901/jaba.2010.43-1
- Jimenez, B. A., & Kemmery, M. (2013). Building the early numeracy skills of students with moderate intellectual disability. *Education and Training in Autism and Developmental Disabilities, 48*(4), 479-490.
- Kodak, T., Fisher, W. W., Clements, A., & Bouxsein, K. J. (2011). Effects of computer-assisted instruction on correct responding and procedural integrity during early intensive behavioral intervention. *Research in Autism Spectrum Disorders*, *5*(1), 640-647. https://doi.org/10.1016/j.rasd.2010.07.011
- \*Leung, J. P. (1994). Teaching spontaneous requests to children with autism using a time delay procedure with multicomponent toys. *Journal of Behavioral Education*, *4*(1), 21-31. https://doi.org/10.1007/BF01560506
- Leung, J. P., & Chan, O. T. (1993). Teaching spontaneous verbal requests to Chinese children with autism using a time delay procedure. *Bulletin of the Hong Kong Psychological Society*, 30-31, 47–58.
- Liber, D. B., Frea, W. D., & Symon, J. B. (2008). Using time-delay to improve social play skills with peers for children with autism. *Journal of Autism and Developmental Disorders*, *38*(2), 312-323. https://doi.org/10.1007/s10803-007-0395-z
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- Shepley, C., Lane, J. D., & Gast, D. L. (2016). Using SMART board technology to teach young students with disabilities and limited group learning experience to read environmental text. *Education and Training in Autism and Developmental Disabilities*, 51(4), 404-420.
- Spooner, F., Kemp-Inman, A., Ahlgrim-Delzell, L., Wood, L., & Davis, L. L. (2015). Generalization of literacy skills through portable technology for students with severe disabilities. *Research and Practice for Persons with Severe Disabilities, 40*(1), 52-70. https://doi.org/10.1177/1540796915586190
- Swain, R., Lane, J. D., & Gast, D. L. (2015). Comparison of constant time delay and simultaneous prompting procedures: Teaching functional sight words to students with intellectual disabilities and autism spectrum disorder. *Journal of Behavioral Education*, 24(2), 210-229. https://doi.org/10.1007/s10864-014-9209-5
- \*Taylor, B. A., & Harris, S. L. (1995). Teaching children with autism to seek information: Acquisition of novel information and generalization of responding. *Journal of Applied Behavior Analysis*, 28(1), 3-14. https://doi.org/10.1901/jaba.1995.28-3

## **MIDDLE SCHOOL (12-14 YEARS):**

- \*Carlile, K. A., Reeve, S. A., Reeve, K. F., & DeBar, R. M. (2013). Using activity schedules on the iPod touch to teach leisure skills to children with autism. *Education & Treatment of Children, 36*(2), 33-57. https://doi.org/10.1353/etc.2013.0015
- Collins, B. C., Hager, K. L., & Galloway, C. C. (2011). Addition of functional content during core content instruction with students with moderate disabilities. *Education and Training in Autism and Developmental Disabilities, 46*(1), 22-39.
- Dotto-Fojut, K. M., Reeve, K. F., Townsend, D. B., & Progar, P. R. (2011). Teaching adolescents with autism to describe a problem and request assistance during simulated vocational tasks. *Research in Autism Spectrum Disorders*, 5(2), 826-833. https://doi.org/10.1016/j.rasd.2010.09.012







#### **HIGH SCHOOL (15-18 YEARS):**

\*Smith, K. A., Ayres, K. A., Alexander, J., Ledford, J. R., Shepley, C., & Shepley, S. B. (2016). Initiation and generalization of self-instructional skills in adolescents with autism and intellectual disability. *Journal of Autism and Developmental Disorders*, 46(4), 1196-1209. https://doi.org/10.1007/s10803-015-2654-8

#### **YOUNG ADULTS (19-22 YEARS):**

- Hua, Y., Woods-Groves, S., Kaldenberg, E. R., & Scheidecker, B. J. (2013). Effects of vocabulary instruction using constant time delay on expository reading of young adults with intellectual disability. *Focus on Autism and Other Developmental Disabilities*, 28(2), 89-100. https://doi.org/10.1177/1088357613477473
- Miller, C., Collins, B. C., & Hemmeter, M. L. (2002). Using a naturalistic time delay procedure to teach nonverbal adolescents with moderate-to-severe mental disabilities to initiate manual signs. *Journal of Developmental and Physical Disabilities*, 14(3), 247-261. https://doi.org/10.1023/A:1016072321661
- Saadatzi, M. N., Pennington, R. C., Welch, K. C., Graham, J. H., & Scott, R. E. (2017). The use of an autonomous pedagogical agent and automatic speech recognition for teaching sight words to students with autism spectrum disorder. *Journal of Special Education Technology, 32*(3), 173-183. https://doi.org/10.1177/0162643417715751
- \*Smith, K. A., Ayres, K. A., Alexander, J., Ledford, J. R., Shepley, C., & Shepley, S. B. (2016). Initiation and generalization of self-instructional skills in adolescents with autism and intellectual disability. *Journal of Autism and Developmental Disorders, 46*(4), 1196-1209. https://doi.org/10.1007/s10803-015-2654-8

Notes: \* denotes the study has participants in at least two age ranges

Bold denotes new studies since 2011 (2012 till 2017)







# TIME DELAY PROCEDURES

## **CONSTANT TIME DELAY (CTD):**

When beginning to teach a target skill/behavior using CTD, provide a 0-second delay (no delay) between the cue and prompt. Model prompts are the most common prompt type to use with this procedure. After a minimum of two trials using the 0-second delay, adults use a fixed amount of time between the cue and the controlling prompt (typically 3-5 seconds). This delay allows learners to acquire a new skill without becoming prompt dependent. 9-9

### PROGRESSIVE TIME DELAY (PTD):

Like CTD, adults use a 0-second delay when first teaching a target skill/behavior. Then, adults gradually increase the wait time rather than using a fixed time interval. The delay is usually increased to a 5 second interval but can be as much as 10 seconds.

#### **COMPONENTS OF BOTH TIME DELAY PROCEDURES:**

**Antecedent -** A cue that tells learner to use the target skill

Target skill - Learner response

Consequence - Feedback/reinforcement provided by teachers and practitioners



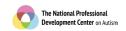






# **PRE-ASSESSMENT**

Learner's Name: Date/Time: Observer(s):  Target Goal/Behavior/Skill: Directions: Use this worksheet to take notes on the learner's behavior to determine if they have brerequisite skills needed for time delay.					
Time	Activity	Behavior			





# **REINFORCER SAMPLING & CHECKLIST**

Learner's Name:	Date/Time:
Observer(s):	
Target Goal/Behavior/Skill:	
Directions: Use this worksheet and checkli	st to identify and select reinforcers/rewards based on
the learner's preferred items, interests, and	activities for <b>Positive Reinforcement</b> and <b>Token</b>
Fconomy	

#### **CONDUCT A REINFORCER SAMPLING:**

- 1. Sit in front of the learner and hold up two items. Ask the learner to "Pick one."
- 2. Wait 10 seconds for the learner to indicate selection in manner that is appropriate for the learner (e.g., verbalization, pointing, using an augmentative communication device).
- 3. Place the selected object in a container for learner's selection and non-selected item in the not selected container.
- 4. Repeat steps 1 through 3 until half of the objects presented are selected.

ltem 1	Selected?	ltem 2	Selected?
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No

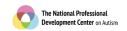
## LIST SELECTED REINFORCERS:





## **LIST POTENTIAL REINFORCERS:**

1 NA/legt matured resinfareage could be used?	AGE APPROPRIAT	TE?
1. What natural reinforcers could be used?	Yes No	
2. What activities, objects, and/or foods does the learner select independently?	Yes No	
3. What phrases or gestures seem to produce a pleasant response from the learner?	Yes No	
4. What does the learner say they would like to work for (if appropriate)?	Yes No	
5. What reinforcers were identified by parents/family members and/or team members as being successful in the past?	Yes No	
6. Does the learner require additional adaptations/ modifications/supports? Such as visual supports or a communication device?	Yes No	
7. Have reinforcers/rewards for the learner been identified based on the learner's interests/preferred items and/or activities?	Yes No	
8. Are additional materials and/or resources for using Functional Behavior Assessment ready and available?	V N-	
	Yes No	





FC	FOODS FOR SNACKS/MEALTIME ROUTINES:						
	Cheese		Fruit		Pretzels		
	Chicken Nuggets		Goldfish		Other:		
	Chips		Ice Cream		Other:		
	French Fries		Pizza		Other:		
GA	MES FOR PLAY/RECESS	RO	UTINES:				
	Burrito games with a		Peek-a-Boo		Other:		
	blanket		Tickles		Other:		
	Chase		Other:		Other:		
	Pat-a-Cake						
TC	YS FOR PLAY/RECESS R	OU	TINES:				
	Books		Legos		Remote controlled toys		
	Cars/Trains/Trucks		Noisy toys		Other:		
	Computer		Phones		Other:		
	Doll house		Puzzles		Other:		
CD	COLAL INITEDESTS FOR A	CT	N/ITIEC/DOLITINIEC				
	Pook Character				TV Show:		
	Book Character:		Movie Character:		TV SHOW.		
	Book:		Movie:		Video Game:		
	Cars, Trains, Trucks		Music		Other:		
	Computers/Technology		Numbers		Other:		
	Dinosaurs		Real-Life Person:		Other:		
	Letters		TV Show Character:		Other:		



# **PROMPTING HIERARCHY**

Learner's Name:	Date/Time:
Observer(s):	
Interfering Behavior:	
•	order of prompts based on the learner's needs and
the target skill.	• •

#### **PROMPTS:**

- **Gestural** a physical movement that provides the learner with information about how to perform the target skill/behavior
- **Independent** the learner can perform the target skill/behavior without assistance or support from others
- Model demonstrating the correct way to perform the target skill/behavior for the learner
- **Physical** hands-on assistance given to the learner to support them to perform the target skill/behavior
- Verbal any spoken words direct to the learner to help them perform the target skill/behavior
- **Visual** a picture, icon, or physical object used to provide the learner with information on how to perform the target skill/behavior

Level	Prompt	Instructions
Level 1	Independent	
Level 2		
Level 3		
Level 4		
Level 5		
Level 6		



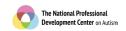






# **PLANNING CHECKLIST**

Learner's Name: Observer(s):	Date/Time:
Target Skill/Goal/Behavior:  Directions: Complete this checklist to determine which to learner on the spectrum as well as if TD is ready to be im	
ASSESS THE LEARNER'S CURRENT ABILITIES:	
Responding to instructional cues: When a cue or att learner able to look in the appropriate direction (at ad	
■ <b>Wait:</b> Is the learner able to wait for approximately four certain of the correct response?	r seconds for a prompt if s/he is not
☐ Imitate others: Is the learner able to imitate others w	when a model is provided?
☐ Stay seated: Is the learner able to stay at an activity f	for 5 to 10 minutes?
☐ Reinforcement: Does the learner have a history of us appropriate reinforcers have been provided?	ing behaviors more frequently after
☐ Follow one-step instructions: Is the learner able to f	ollow simple, one-step instructions?
If you DID NOT check off any of these questions, time with the learner.	delay MIGHT NOT be helpful to use
DEFINE THE CUE:	
1. What is the cue that will signal to the learner to perfor	m the target skill?
2. Is the cue  Naturally Occurring Event	
☐ Material or environmental manipulation	
☐ Task direction	



#### **IDENTIFY THE CONTROLLING PROMPT:**

**Controlling prompt** is the words and/or actions said/used to ensure that the learner will perform the target skill successfully. It can be a gestural, verbal, visual, model, or physical prompt.

Try out different prompts to see which ones are successful in getting the learner to complete the task consistently.

Prompt	Description	Level of Success
Gestural		
Model		
Physical		
Verbal		
Visual		

Selected controlling prompt:

### **IDENTIFY TIMES & ACTIVITIES TO USE TIME DELAY:**

Prompt	Possible Opportunities
Individual work	
Small Group	
Embedded instruction	

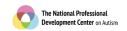






## **SELECT TIME DELAY PROCEDURE & RESPONSE INTERVAL:**

Procedure:
Constant time delay
☐ Progressive time delay
Response Interval:
<b>□</b> 1
<b>□</b> 2
<b>□</b> 3
Other:
PLANNING:
☐ Has the target goal/behavior/skill been identified?
☐ Has baseline data and/or a functional behavior assessment been collected through direct observation of the learner?
☐ Is the target goal/behavior/skill measurable and observable? Does it clearly state <b>what</b> the target goal/behavior/skill is, <b>when</b> it will occur, and <b>how</b> team members/observers will know it has been mastered?
☐ Is Time Delay appropriate for the learner's target goal/behavior/skill?
Does the learner have needed prerequisite skills/abilities?
☐ Does the learner require additional adaptations/modifications/supports? Such as a communication device?
Have reinforcers/rewards for the learner been identified based on the learner's interests/preferred items and/or activities?
☐ Are additional materials and/or resources for using Time Delay ready and available?



# TIME DELAY DECISION TREE

1. Follow these steps until the student responds with 100% accuracy for 2 consecutive trials.

Target Cue: Words and/or actions that signal the learner to perform the target skill/behavior

Give the target cue to the student \_\_\_\_\_

## **Time Delay**

Wait 0-seconds for the student to use the skill

Controlling Prompt: Words and/or actions that ensures the learner performs the target skill/behavior

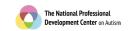
Give the controlling prompt \_\_\_\_\_

## **Student Response**

The student responds correctly

### **Your Response**

Give the student reinforcement and state what the learner did correctly

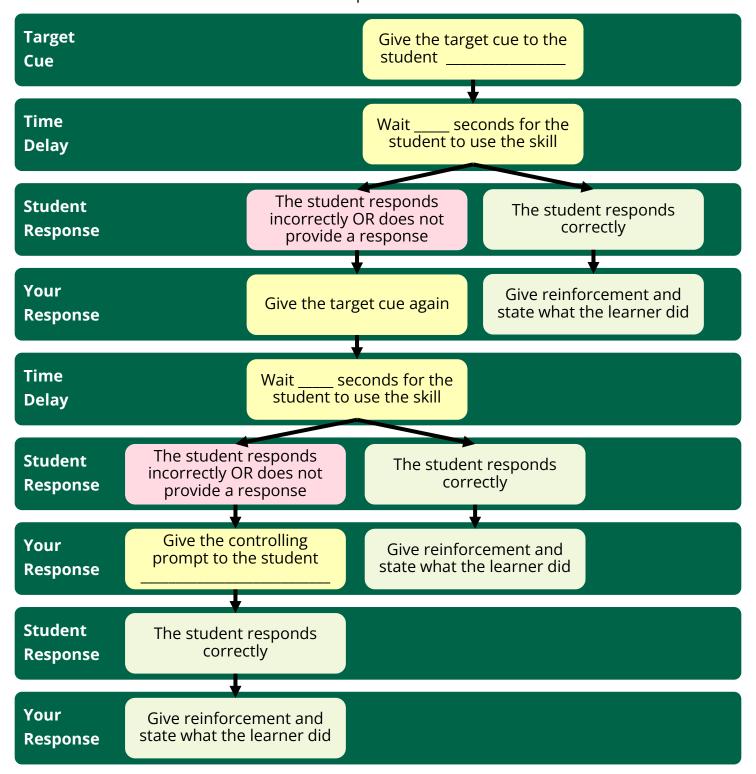


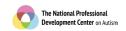


Follow these steps after the student responds with 100% accuracy for 2 consecutive trials.

**Constant time delay:** Wait time should be the same for each trial (generally 3, 4, or 5 seconds)

**Progressive time delay**: Gradually increase wait time (add 1 or 2 seconds) for subsequent trials based on data and the student's responses





# **DATA COLLECTION**

Learner's Name: Observer(s):	Date/Time:
Target Skill/Goal/Behavior:	
•	demonstrating steps of the target behavior/skill.
Remember to collect data on correct res	sponse (+), incorrect response (-), and no response (NR).
Controlling Prompt:	
Response interval/Delay:	Response Interval/Delay:

Trial	Before Prompt	After Prompt	Trial	Before Prompt	After Prompt
1.			1.		
2.			2.		
3.			3.		
4.			4.		
5.			5.		
6.			6.		
7.			7.		
8.			8.		
9.			9.		
10.			10.		
_= Correct _%			_= Correct _%		
_= Incorrect %			_= Incorrect _%		
_= NR _%			_= NR _%		

**Key:** + = Correct response, - = Incorrect response, NR = No response









# **MONITORING PROGRESS CHECKLIST**

Learner's Name: Date/Time: Observer(s):
Target Skill/Goal/Behavior: Directions: Complete this checklist to determine if the learner is making progress with using Time Delay.
MONITORING PROGRESS:
☐ Is the target skill or behavior well defined?
☐ Is the skill or behavior measurable and observable?
☐ Has data been collected and analyzed?
☐ Is the skill or behavior too difficult for the learner?
☐ Was Time Delay used with fidelity?
Are there too many reinforcers?
☐ Are there too few reinforcers?
☐ Are all team members using Time Delay in a consistent manner?
☐ Is Time Delay occurring at a sufficient level to maintain the behavior or target skill?
ANECDOTAL NOTES:





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# STEP-BY-STEP GUIDE

This step-by-step practice guide outlines how to plan for, use, and monitor Time Delay.

#### **BEFORE YOU BEGIN...**

Each of the following points is important to address so that you can be sure Time Delay is likely to address the target goal/behavior/skill of your learner on the spectrum.



#### HAVE YOU FOUND OUT MORE INFORMATION ABOUT ...?

- ☐ Identifying the interfering behavior...?
- ☐ Collecting baseline data through direct observation...?
- Establishing a target goal or outcome that clearly states when the behavior will occur, what the target goal or outcome is, and how team members and/or observers will know when the skill is mastered...?

If the answer to any of the above questions is 'No,' review the process of how to select an appropriate EBP (https://afirm.fpg.unc.edu/selecting-EBP).

For more information about Time Delay, please visit https://afirm.fpg.unc.edu/.

#### STEP 1: PLANNING FOR TD

The planning step details the initial steps and considerations involved to prepare for using Time Delay with a learner on the spectrum.

#### 1. Assess learner's current abilities

Assess the learner's current abilities to determine if the learner has essential prerequisite skills needed for time delay to be successful.

#### 2. Select target stimulus and cue

- The target stimulus is the event, thing, or situation to which the learner should respond when a team member is not present or after the target skill/behavior is mastered.
- The target cue will signal the learner to perform the skill or behavior.

Keep in mind that the two **Time Delay** procedures are:

- Constant Time Delay
- Progressive Time Delay

While each procedure is different, the practice guide is applicable to all. When unique features are tied to a specific procedure, we will identify them through examples or cautions.







# TD

#### 3. Select the controlling prompt

Select the least restrictive prompt needed by the learner to use the target skills successfully as the controlling prompt.

#### 4. Select reinforcers

To increase the likelihood that the learner will use the target skill again in the future, select reinforcers that are appropriate for the individual learner and the target skill/behavior.

#### 5. Identify times and activities for using time delay

Time delay can be used during individual work, small group activities, and embedded within ongoing routines and activities at home or at school.

#### 6. Determine time delay procedure

Team members should decide to use constant time delay (implement a fixed delay) or progressive time delay (gradually increase the delay).

Complete the **Time Delay Planning Worksheet** before using the procedure.

#### **STEP 2: USING TD**

This step details the process of implementing Time Delay with a learner on the spectrum.

#### 1. Establish learner attention and provide cue

Establish learner attention by using an attention getting strategy. Next, the team members presents the cue to begin the teaching activity.

## 2. Deliver the controlling prompt

When beginning to teach a skill using time delay, a fixed 0-second delay is used with both constant time delay and progressive time delay. There is no wait time between the cue and delivering the controlling prompt.

## 3. Increase time delay

- With constant time delay, team members implement a fixed delay (usually 3-5 seconds) after using the initial 0-second delay.
- With progressive time delay, team members gradually increase the delay between providing the cue and delivering the controlling prompt.

## 4. Respond to learner's attempts

Team members will respond to learner's attempts. If the learner correctly responds, team members offer reinforcement and state what the learner did well. If the response is incorrect or no response is provided, team members provide the controlling prompt.







#### **STEP 3: MONITORING TD**

The following step details how to monitor the use of Time Delay with a learner on the spectrum and how to determine next steps based on the data.

#### 1. Collect and analyze data

Track learner's unprompted correct responses, prompted correct responses, unprompted errors, prompted errors, and no errors.

Use the **Time Delay Data Collection Form** to collect data.

#### 2. Determine next steps based on learner progress

Collecting data will help team members decide about the effectiveness of using Time Delay and whether the learner on the spectrum is making progress. If a learner is making progress based upon data collected, team members should continue to use the selected strategies.

If team members determine that the learner is not making progress, consider the following:

- Have team members received TD training or is additional training needed?
- Is the target goal/behavior/skill well defined?
- Is the target goal/behavior/skill measurable and observable?
- Has enough time been devoted to using Time Delay (frequency, intensity, and/or duration)?
- Is the target goal/behavior/skill being targeted during appropriate routines and activities?
- Is TD appropriate or a 'good fit' for the target behavior?
- Are TD strategies addressing the target behavior?
- · Does the learner need additional supports?
- Are the selected materials and activities intrinsically motivating for the learner?

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









# **IMPLEMENTATION CHECKLIST**

## **BEFORE YOU START, HAVE YOU...?**

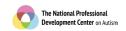
Identifying the target goal/behavior/skill?		Identify	ving the	target	goal/be	havior	/skill	?
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☐ Collecting baseline data through direct observation...?

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

If the answer to any of the above questions is 'No,' review the process of how to select an appropriate EBP (https://afirm.fpg.unc.edu/selecting-EBP).

	Observation:	1	2	3	4	5	
	Date:						
	Observer's Initials:						
	STEP 1: PLANNING						
1.1	Assess learner's current abilities						
1.2	Select target stimulus and cue						
1.3	Select controlling prompt						
1.4	Select reinforcers						
1.5	Identify times and activities for using time delay						
1.6	Determine time delay procedure						
	STEP 2: USING						
2.1	Establish learner attention and provide cue						
2.2	Deliver controlling prompt						
2.3	Increase time delay						
2.4	Respond to learner's attempts						
	STEP 3: MONITORING						
3.1	Collect data on target behaviors						
3.2	Determine next steps based on learner progress						







# TIP SHEET FOR PROFESSIONALS

#### TIME DELAY ...

- Is a foundational evidence-based practice for children and youth on the spectrum from 0-22 years old that can be implemented in multiple settings.
- is implemented by an adult providing a controlling prompt before learner responds which reduces errors and increases reinforcement opportunities.



Time Delay

#### using tir

- Time delay reduces prompt dependence.
- Time is user-friendly and cost efficient, because it does not require any additional materials other than those that are needed for the selected instructional activity.

WHY USE WITH LEARNERS ON THE SPECTRUM?

#### TIPS:

- Assess the learner prior to using time delay to be sure the learner has the prerequisite skills needed for the practice.
- Select a controlling prompt that is the least restrictive prompt needed by the learner to use the target skill successfully.
- Respond to the learner's attempts based upon if the attempt was correct or incorrect.

#### **INSTRUCTIONAL OUTCOMES:**

The evidence-base for Time Delay supports its use to address the following outcomes, according to age range, in the table below:

Age	Academic	Adaptive	Behavior	Cognitive	Communication	Joint Attention	Motor	Play	School readiness	Social	Vocational
0-2						Yes				Yes	
3-5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
6-11	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
12-14	Yes	Yes			Yes					Yes	Yes
15-18		Yes							Yes		Yes
19-22	Yes	Yes			Yes				Yes		Yes



#### STEPS FOR IMPLEMENTING:

#### 1. PLAN

- Assess learner's current abilities
- · Select target stimulus and cue
- Select controlling prompt
- · Select reinforcers
- Identify times and activities for using time delay
- Determine time delay procedure

#### 2. USE

- Establish learner attention and provide cue
- Deliver controlling prompt
- Increase time delay
- Respond to learner's attempts

#### 3. MONITOR

- Collect and analyze data on target behaviors
- Determine next steps based on learner progress



#### Time Delay TD

This sheet was designed as a supplemental resource to provide basic information about Time Delay for professionals working with learners on the spectrum.

For more information about this selected evidence-based practice, please visit https://afirm.fpg.unc.edu/.





# **PARENT'S GUIDE**

#### WHAT IS TD?

- Time Delay is a foundational evidence-based practice for children and youth on the spectrum from 0-22 years old.
- Time delay includes a set of procedures that fades prompts as learners gain new skills.
- The two time delay procedures are constant time delay (CTD) and progressive time delay (PTD).



Time Delay

## WHY USE THIS TD WITH MY CHILD?

- Time delay assists learners with transferring target skills and behaviors to new situations.
- Research studies have shown that Time Delay has been used effectively with many age groups to achieve outcomes in the following areas: academic, adaptive/selfhelp, behavior, communication, joint attention, motor, play, school readiness, social, and vocational.

#### WHAT ACTIVITIES CAN I DO AT HOME?

- When your child struggles with an activity at home (brushing teeth, eating with a spoon, greeting family members, cleaning up room), make sure your child is successful by immediately helping your child complete the activity. Provide the level of help needed for your child to be successful.
- Gradually allow your child the opportunity to try activity on his/her own before providing help.
- When your child completes a difficult task, be sure to provide encouragement and/or a reward.

#### **Time Delay** TD

This parent introduction to TD was designed as a supplemental resource to help answer questions about Time Delay.

To find out more about how this TD is being used with your child, please talk with:

For more information about this selected evidence-based practice, please visit https://afirm.fpg.unc.edu/.







# **ADDITIONAL RESOURCES**

#### **WEBSITES:**

Grattan, J., & Demchak, M. (n.d.). Progressive Time Delay Prompting. https://www.unr.edu/ndsip/english/resources/tips/progressive-time-delay-prompting

Ledford, J.R., Chazin, K.T., Maupin, T.N. (2016). Progressive time delay. In Evidence-based instructional practices for young children with autism and other disabilities. http://ebip.vkcsites.org/progressive-time-delay

The Center on Secondary Education for Students with Autism Spectrum Disorders. (n.d.). Evidence-based Practice (EBP) High School Case Study: Time Delay. http://csesa.fpg.unc.edu/highschool-case-studies







# **CEC STANDARDS**

## INITIAL PRACTICE-BASED STANDARDS FOR EARLY INTERVENTIONISTS/EARLY CHILDHOOD (0-5 YEARS; CEC, 2020)

#### Standard 6: Using Responsive and Reciprocal Interactions, Interventions, and Instruction

- 6.3 Engage in ongoing planning and use flexible and embedded instructional and environmental arrangements and appropriate materials to support the use of interactions, interventions, and instruction addressing developmental and academic content domains, which are adapted to meet the needs of each and every child and their family.
- 6.6 Use responsive interactions, interventions, and instruction with sufficient intensity and types of support across activities, routines, and environments to promote child learning and development and facilitate access, participation, and engagement in natural environments and inclusive settings.
- 6.7 Plan for, adapt, and improve approaches to interactions, interventions, and instruction based on multiple sources of data across a range of natural environments and inclusive settings.

### **INITIAL PRACTICE-BASED STANDARDS FOR (GRADES K-12; CEC, 2020):**

#### **Standard 5: Supporting Learning Using Effective Instruction**

- 5.1 Use findings from multiple assessments, including student self-assessment, which are responsive to cultural and linguistic diversity and specialized as needed, to identify what students know and are able to do. They then interpret the assessment data to appropriately plan and guide instruction to meet rigorous academic and non-academic content and goals for each individual.
- 5.2 Use effective strategies to promote active student engagement, increase student motivation, increase opportunities to respond, and enhance self-regulation of student learning.
- 5.3 Use explicit, systematic instruction to teach content, strategies, and skills to make clear what a learner needs to do or think about while learning.
- 5.6 Plan and deliver specialized, individualized instruction that is used to meet the learning needs of each individual.

## **ADVANCED PRACTICE-BASED STANDARDS (CEC, 2012):**

## Standard 3: Programs, Services, and Outcomes

- 3.1 Design and implement evaluation activities to improve programs, supports, and services for individuals with exceptionalities.
- 3.2 Use understanding of cultural, social, and economic diversity and individual learner differences to inform the development and improvement of programs, supports, and services for individuals with exceptionalities.
- 3.3 Apply knowledge of theories, evidence-based practices, and relevant laws to advocate for programs, supports, and services for individuals with exceptionalities.







# **GLOSSARY**

**Antecedent -** a cue that tells the learner to use the target skill/behavior

**Baseline** - information gathered from multiple sources to better understand the target behavior, before using an intervention or practice

**Baseline data** - data collected on current performance level prior to implementation of intervention

**Consequence -** feedback/reinforcement provided by teachers and practitioners.

**Constant time delay -** following a minimum of two trials using the 0-second delay, team members use a fixed amount of time between the cue and the controlling prompt (typically 3-5) seconds).

**Controlling prompt -** ensures the learner performs the target skill/behavior correctly.

**Cue -** signals the learner to perform the skill.

**Duration data -** records how long a learner engages in a particular behavior or skill.

**Event sampling -** collects frequency data at every instance the behavior occurs.

**Frequency data** - used to measure how often the learner on the spectrum engages in the target skill or behavior.

**Generalization** - when the target skill or behavior continues to occur when the intervention ends, in multiple settings, and with multiple individuals (e.g., peers, teachers, parents)

**Gestural prompt -** a gesture/movement provides the learner with information about how to use a target skill or complete a task

**Individualized Intervention** - an intervention that is planned and implemented in a way specific to the learner receiving the intervention

**Interfering behavior -** is a behavior that interferes with the learner's ability to learn.

**Model prompts -** involve demonstrating the target skill and are used when verbal or visual prompts are not sufficient in helping learner use the target skill correctly.

**Physical prompts -** useful when teaching motor behaviors and when the learner does not respond to less restrictive prompts.

**Positive reinforcement** - refers to the presentation of a reinforcer after a learner uses a target skill/behavior, therefore encouraging him/her to perform that behavior again.





**Prompt** - any help provided that will assist the learner in using specific skills. Prompts can be verbal, gestural, or physical.

**Progressive time delay -** following a minimum of two trials using the 0-second delay, team members gradually increase the wait time rather than using a fixed time interval.

**Prompted correct response -** Learner uses the target skill/behavior correctly after being prompted.

**Prompted incorrect response -** learner attempts to use the target skill/behavior after being prompted but performs it incorrectly.

Reinforcement - feedback that increases the use of a strategy or target behavior/skill.

**Reinforcer sampling -** helps to identify activities and materials that are motivating to learner with autism. Also known as a preference assessment.

**Reinforcers -** increase the likelihood that the target skill/behavior will be used again in the future.

**Response interval -** the amount of time the learner has to respond.

**Target behavior** - the behavior or skill that is the focus of the intervention. Behavior may need to be increased or decreased.

**Target stimulus -** the event, thing, or situation to which the learner should respond when a team member is not present or after the target skill/behavior is mastered.

**Team members** - includes the parents, other primary caregivers, IEP/IFSP team members, teachers, therapists, early intervention providers, and other professionals involved in providing services for the learner on the spectrum.

**Time delay -** is a response prompting procedure that systematically fades prompts during instructional activities.

**Unprompted correct response -** learner uses the target skill/behavior correctly without prompts.

**Unprompted incorrect response -** learner attempts to use the target skill/behavior without prompts but performs it incorrectly.

**Verbal prompts** - includes any verbal assistance provided to learners to help them use a target skill correctly. Verbal cues range in intensity level from least to most restrictive.

**Visual supports -** visual supports are concrete cues that are paired with, or used in place of, a verbal cue to provide the learner with information about a routine, activity, behavioral expectation, or skill demonstration.





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