The logo for H&T Driver Rehabilitation Specialists, LLC is positioned in the top left corner of a graphic. The graphic itself is a square with a black background on the left side where the text is located. The right side of the square is filled with a complex, abstract pattern of overlapping, semi-transparent shapes in shades of blue, purple, and red, creating a sense of depth and movement.

# H&T

Driver Rehabilitation Specialists, LLC

# Drive Mindful, Drive Skillful

## A Cognitive Training Guide

Created by Amanda Ambrosy

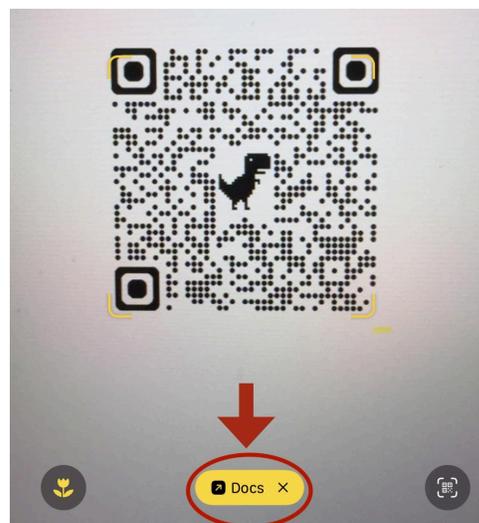
Reviewed by Christopher Thompson, OTR, MSOT, CDRS

**Please Note:** This program contains some QR codes. Most phones and tablets are able to scan QR codes through their camera app. Follow these instructions for opening each webpage.

1. Open camera app on your device



2. Aim camera at QR Code and click on the pop up.



If you are unable to scan the QR codes, please locate this program on our website (<https://www.htdriverrehab.com/>) and click the following link for access to all webpages.

[All Webpages Link](#)

## BEFORE YOU BEGIN

Please take the [pre-survey](#) before completing any exercises/ training with H&T Driver Rehabilitation Specialists. Either click the link or scan the QR code below with your phone camera to access the survey.

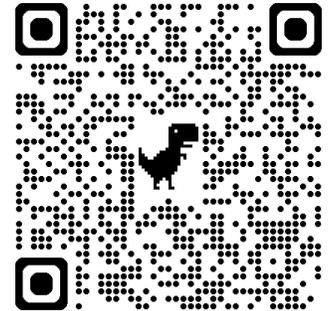


You will be asked to complete another survey at the conclusion of the program. We ask you to provide your name on the surveys to compare results and ensure the program was effective. This program is independent of your evaluation with H&T Driver Rehabilitation Specialists, and participation in the survey will not affect your evaluation scores in any way. The purpose of the survey is to assess the effectiveness of the program. It should take less than 10 minutes to complete and is voluntary. However, your input will help develop meaningful and effective resources for you and for future clients. The survey may be completed by the client or by a caregiver, family member, or support person providing responses based on the client's input if needed.

# INTRODUCTION

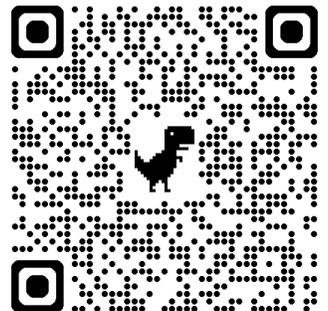
## I. Overview

This program was created by an occupational therapy student for their doctoral capstone project. For information on the program and its creation, please scan the QR code.



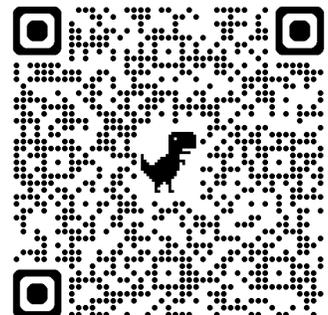
## II. Cognition and Vision's Role in Driving

Driving requires a complex combination of cognitive and visual skills to complete. For information on their role in driving, please scan the QR code.



## III. Cognitive Training and Selected Games

This is a 2-week evidence-based program containing exercises that have been shown to improve or maintain cognition. For information on cognitive training and the games selected for this program, please scan the QR code.



# PROGRAM

Research varies greatly on how often cognitive training should occur for the best results. However, many studies with positive results had their participants complete exercises between 2-5x a week, with the maximum usually being for 1 hour. It is also important to note that being active and exercising facilitates brain health and function, and therefore has a positive effect on higher level cognition as well (Zhou et al., 2020). **Please use the table on page 8 to take notes and track of your progress.**

## → Weekly Progression (complete each game for 20-30 minutes)

Day 1: Memory Matrix, N-Back

Day 2: Match-3, Chess

Day 3: Hidden-object, Sudoku

Day 4: Sudoku, Chess

Day 5: Memory Matrix, N-Back

## → Games and How to Progress Through Them

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**Memory Matrix:** <https://ttitto.github.io/> (Tip: make the game bigger by clicking the 3 stacked dots in top right of the webpage and increase the zoom).

- Your task is to remember the position of each of the squares presented, and recall them by clicking the same squares. This game is adaptive, so the grid will get smaller when you get one wrong and get bigger when you get one right. Click the screen between each attempt to continue. Try to beat your previous score by increasing the number of squares presented each time!

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**N- Back:** <https://brainscale.net/app/dual-n-back/training>

- For the first day, set up the game using the following settings:
  - ◆ Change “Type” in the top right corner to position only and hit save.

- ◆ Change "N-Back" in the top right corner to 1.
- Play instructions: You are trying to remember the position (or location in the grid) of the square that flashed 1 before the current square. When you believe it matches, you hit the "position" button (e.g., a square flashes in the top right box. If it then flashes there again, you hit the position button. If it flashes in the bottom left, you do not press any button until it matches again.)
- After achieving a success rate of 80-100%, set up the game using the following settings:
  - ◆ Change "Type" in the top right corner to audio only and hit save.
  - ◆ Change "N-Back" in the top right corner to 1.
  - Play instructions: You are trying to remember the letter said 1 before the current letter. When you believe it matches, you hit the "Audio" button (e.g., if you hear "L"... "L" you hit the audio button. If you hear "L"... "K", you do not press any button and wait until you hear the same letter twice again.)
- Once you hit 80-100% accuracy, advance to the next level. Set up the game using the following settings:
  - ◆ Change "Type" in the top right corner to position only and hit save.
  - ◆ Change "N-Back" in the top right corner to 2
  - Play instructions: You are trying to remember the position (or location in the grid) of the square that flashed 2 before the current square. When you believe it matches, you hit the "position" button. (e.g., if the square flashes in the top right box, then flashes in the top left, then in the top right again, you hit the position button when you see it in the same position as two flashes ago. If the square flashes in the top right box, then flashes in the top left, then in the middle, you do not hit any button.)

- Once you hit 80%-100% accuracy, you can continue to progress the game by adding more stimuli. Try changing the type to audio AND position and keeping N-Back at 1. Then, change N-Back to 2, and so on.
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**Match-3:** <https://www.bubbleshooter.net/game/bejeweled/>

- Your goal is to match 3 jewels, and pass each level without running out of moves. Your moves run out when there are no more matches, but the progress bar on the bottom is not filled. Larger matches (4 in a row), or moves that create more than one match, gains more progress points. Try to increase the amount of levels you can pass each time you play!
- 

**Chess:** Chess is a very complex game, with multiple moving pieces.

- For the first day, focus on learning the pieces and their moves. Complete all “chess pieces” modules and the first two “fundamentals” modules (capture and protection) provided by [lichess.org](https://lichess.org).
  - On the second day, first review what you learned on day 1 using the beginner cheat sheet provided by <https://www.chess-game-strategies.com/>. You may also want to save or print this page for future reference. Then, complete the last 4 modules on [lichess.org](https://lichess.org) under fundamentals (combat, check in one, out of check, and mate in one)
  - On the third day (week 2), review the game pieces and rules you learned last week using the cheat sheet provided by [chess.com](https://chess.com). Then, begin playing! Try to beat your opponent at <https://www.chess.com/play/computer> OR play on a physical board with a peer.
    - Start by clicking “adaptive” and the first character. The adaptive setting will allow you to click the light bulb in the bottom right for a hint.
  - As you grow more comfortable and win games, attempt the beginner, intermediate, advanced, and master levels.
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**Hidden Object:** <https://www.crazygames.com/game/hidden-objects>  
<https://www.crazygames.com/game/find-me-lost-objects>

- Your task is to find each of the provided items. You can click and drag the screen to look around. After achieving 3 stars, move on to the next level.
- After completing each level on the first link, try the hidden object game listed below. It has a more distracting background, making objects harder to identify.
  - <https://www.crazygames.com/game/hidden-objects>

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**Sudoku:** Your task in sudoku is to fill each grid with numbers 1-9. Each row, column, and grid can only have each number once.

- For the first day, start by learning the basics of the game with a [4x4 grid](#) (numbers 1-4).
- After completing with 0 errors, move on to the [6x6 grid](#) (numbers 1-6).
- After completing with 0 errors, move on to playing a full grid with hints available: <https://sudoku.com/easy/> (do not make too many guesses or you will lose the game and have to restart! By clicking the pencil icon, you can make notes without submitting a number). After completing each with 80-100% accuracy, progress through easy, medium, and hard.

## Progress Tracking

	Chess	Match-3	N-Back	Memory Matrix	Sudoku	Hidden Object
Week 1	Day 1:  _____		Day 1:  _____	Day 1:  _____	Day 1:  _____	
	Day 2:  _____		Day 2:  _____	Day 2:  _____	Day 2:  _____	
Week 2	Day 1:  _____		Day 1:  _____	Day 1:  _____	Day 1:  _____	
	Day 2:  _____		Day 2:  _____	Day 2:  _____	Day 2:  _____	

## THANK YOU

Thank you for completing this program. We would greatly appreciate your feedback in the [post-survey](#). Either click the link or scan the QR code below with your phone camera to access the survey.



We ask you to provide your name on the surveys to compare results and ensure the program was effective. This program is independent of your evaluation with H&T Driver Rehabilitation Specialists, and participation in the survey will not affect your evaluation scores in any way. The purpose of the survey is to assess the effectiveness of the program. It should take less than 10 minutes to complete and is voluntary. However, your input will help develop meaningful and effective resources for you and for future clients. The survey may be completed by the client or by a caregiver, family member, or support person providing responses based on the client's input if needed.

Scan the QR code below to access references for this program.

