

Chapter 5: Integrated Behavioral Health and Cognitive Rehabilitation Interventions for Persistent Symptoms Following Mild Traumatic Brain Injury (SCORE Arm 4)

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Introduction

The following materials are part of “Arm 4/Integrated Interdisciplinary Cognitive Rehabilitation” for the Study of Cognitive Rehabilitation Effectiveness (SCORE).

The 60-hour intervention took place over 6 weeks. This intervention was unique in the inclusion of both traditional cognitive rehabilitation components and a psychological intervention.

Every effort was made to assure continuity of therapist as well as time of day for client convenience. Clients participated in 4-hour daily individual sessions, with 3 hours of traditional cognitive rehabilitation and 1 hour of psychotherapy targeting anxiety/depressive symptoms. Clients also participated in 3 hours of group therapy each week -- 2 hours of traditional cognitive group therapy with 1 hour of homework and 1 hour of psychotherapy using cognitive behavioral therapy (CBT) principles to target post-concussion symptoms and depression. In addition, clients had 1 hour of proctored computer-based “homework” and 1 hour of psychotherapy homework each week.

Professionals with a variety of different backgrounds, including experienced occupational therapists and speech language pathologists, delivered the cognitive portions of this intervention. Doctoral-level psychologists delivered the psychotherapy portions of the program. All SCORE participants received the standard of care, which included education (see Chapter 2) and symptom-based medical management consistent with the VA/DoD Clinical Practice Guideline for the Management of Concussion/MTBI.¹

Chapter 5 is divided into the individual and group cognitive and behavioral health intervention clinician guides and client manuals, which include examples and answer keys. Session callouts in clinician guides refer to those sections in the client manuals.

- Part I: Clinician Guide to Individual Cognitive Rehabilitation Interventions
- Part II: Client Manual for Individual Cognitive Rehabilitation Interventions
- Part III: Clinician Guide to Arm 3 Traditional & Arm 4 Integrated Cognitive Group Interventions

- Part IV: Client Manual for Arm 3 Traditional & Arm 4 Integrated Cognitive Group Interventions
- Part V: Clinician Guide to Individual Behavioral Health Therapy Protocol
- Part VI: Client Manual for Individual Behavioral Health Therapy Protocol
- Part VII: Mindfulness
- Part VIII: Client Manual for Group Behavioral Health Group Therapy
- SCORE Handouts
- Appendix A: Acronyms
- Appendices appropriate to the chapter section

Part I: Clinician Guide to Individual Cognitive Rehabilitation Interventions

1: Goal Setting

Session 1: Assessment and Introduction

Topic: Goal Setting				
Session 1 Objectives (50 minutes)				
<input checked="" type="checkbox"/>	Lecture topic		Notes	Time Allotted
	Orientation to Manual		Refer to <i>Introduction to the Study of Cognitive Rehabilitation Effectiveness Client Manual</i> and <i>SCORE Daily Planner calendars</i> .	5 Min
	Orient to <i>SCORE Daily Planner</i> sheet			
	Clinical Interview		Refer to SCORE Cognitive Rehabilitation Assessment Template; Canadian Occupational Performance Measure© (COPM) ² and Matching Person and Technology (MPT) Assessment. ³	20 Min
	Administer COPM		<i>Canadian Occupational Performance Measure© ordering information:</i> https://www.caot.ca/copm/ordering.html	15 Min
	Step 1 (A-C)			
	Steps 2 & 3 (optional)			
	Administer MPT Assessment		<i>Form 2, History of Support Use: Technologies, Special Purpose Devices, and Personal Assistance</i>	10 Min
	Assistive Technology Assessment Form 2, History of Support Use			

Cognitive rehabilitation assessment documentation sample

Name

Date of Visit

Duration of Session Cognitive assessment, 60 minutes

Chief Complaint

History of Present Illness Client is status post a mild traumatic brain injury (mTBI)/concussion sustained while deployed in support of Operation Iraqi Freedom (OIF)/Operation Enduring Freedom (OEF)/ and Operation New Dawn (OND, new name for OIF) and has residual cognitive complaints.

EDUCATION AND LEARNING PREFERENCE	
Level of Education	
Barriers to Learning	
Preferred Learning Style	
Primary Language	

SOCIAL HISTORY	
Marital Status	
Children	
MILITARY HISTORY	
Time in Service	
Number of Deployments	
Military Occupational Specialty	

PAIN	
Location	
Intensity	
Frequency	
Duration	
Quality	
Aggravating Factors	
Alleviating Factors	
NOTE: If pain is greater than 4 on the Baker Wong pain scale (1 to 10), refer client to primary care prescriber/primary prescriber for pain management.	

SPEECH AND LANGUAGE	
Language/Word Finding	
Speech/Stuttering/Slurred	

Assessments/measurements

The COPM is an individualized outcome measure designed to detect change in a self-perception of occupational performance over time.² The COPM is available through the Canadian Association of Occupational Therapists (CAOT), published by CAOT Publications ACE.

WORKSHEET FOR THE MPT MODEL. Use the form titled Technology Utilization Worksheet for the Matching Person and Technology (MPT) Model to identify technologies used, desired, and needed.³ The worksheet is available through The Institute for Matching Person & Technology, 486 Lake Road Webster, New York 14580. Phone/fax 585/671-3461, email IMPT97@aol.com.
<http://www.matchingpersonandtechnology.com/mptdesc.html>

Assessment summary

Client demonstrates memory/concentration/executive function difficulties caused by history of mTBI/concussion.

Cognitive rehabilitation therapy is recommended to improve attentional process, memory, and aspects of executive functioning. Client verbalized difficulty with self-care and productivity areas of occupational performance.

Procedure

Cognitive Assessment, 60 minutes:

Client GOAL		
TREATMENT GOALS		
Reassess date at end of 4 weeks.	GOAL STATUS <i>To be reassessed weekly</i>	
Reassess date at end of 6 weeks.		
Client will demonstrate ability to identify and set personal goals.	<i>Goal met/unmet</i>	Date:
Client will identify selective attention and appropriate strategies.	<i>Goal met/unmet</i>	Date:
Client will identify external and internal strategies to improve memory and learning.	<i>Goal met /unmet</i>	Date:
Client will identify steps to improve planning and organization.	<i>Goal met/unmet</i>	Date:
Client will identify system to improve prospective memory.	<i>Goal met/unmet</i>	Date:
Client will identify alternating attention and appropriate strategies.	<i>Goal met/unmet</i>	Date:

Client education

Client has been educated on the following:

- Typical pattern for recovery after mTBI/concussion to include a positive expectation for recovery
- Areas that will be addressed in the SCORE program

Client verbalized understanding and concurs with current plan of care.

Plan

Client will be seen five times per week for 6 weeks in individual and group settings for cognitive rehabilitation treatment.

Session 2: Introduction to Goal Attainment Scaling

Topic: Goal Setting			
Session 2 Objectives (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
	Review: Scales from assessment.	Refer to <i>Canadian Occupational Performance Measure</i> ®. ² Refer to <i>Matching Person and Technology Assessment</i> . ³	5 Min
	COPM		
	MPT		
	Introduce: Goal Attainment Scaling (GAS)	Use <i>Introduction to Goal Attainment Scaling</i> and <i>Goal Attainment Scaling Forms</i> . For information on calculating a GAS score, weighing the goals by importance and difficulty and T-score conversion, refer to Kieresuk & Sherman, 1968 ⁴ ; Turner-Strokes, 2009 ⁵ ; and Malec, 1999. ⁶	40 Min
	Review introduction to GAS form.		
	Define individual goals (expected level of outcome).		
	Begin to develop goals based on six step process.		
	Homework: Present homework and discuss expectations.	Use <i>Goal Attainment Scaling Forms</i> .	5 Min
	Continue to fill in GAS goals.		

Session 3: APT-3 and Generalization Activity

Topic: Goal Setting			
Session 3 Objectives (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
	Homework: Review status of group homework.		2.5 Min
	Address any questions regarding homework.		
	APT-3 and Attentional Exercise	Refer to <i>Attention Process Training-3 (APT-3) Software</i> and <i>Attentional Exercises</i> .	30 Min
	Complete: APT-3 metacognitive and generalization activities	View performance on APT-3 Computer Program through <i>View Data on Performance</i> then select the task to view or edit <i>Current APT-3 Program>History (View)>Task Data Over Time or Detailed Task Data</i> .	15 Min
	Review performance on APT-3 software.	For generalization activity, refer client to <i>APT -3 Generalization Form</i> and <i>APT -3 Generalization Form Examples</i> in the following pages or in Appendix B.	
	Discuss how various strategies can improve performance and discuss generalization to everyday activities.	Clinician will refer to <i>Clinician Score Sheet</i> in the following pages or in Appendix C to enter data.	
	Fill out clinician score sheet for current APT-3 session.	For information on APT-3 sections, refer to <i>APT-3 Manual</i> (available on APT-3 drive). ⁷	
	Introduce: APT-3 Homework requirements	<i>Client will be able to complete APT-3 Homework following the current individual session.</i>	2.5 Min

Attentional exercise introductory script

Have you ever heard of an athlete described as ‘being in the zone’? This usually refers to a time in the game when the athlete is scoring, running, cycling, jumping or throwing at a phenomenal pace. The athlete is fully immersed in a feeling of energized focus, and all their awareness is channeled toward the effort they must engage in to win. The athlete is completely engrossed in the task, and is able to minimize the effect of any distractions.

Unfortunately, most of us spend the majority of our time out of the zone. This means we easily get caught up in various distractions of life, such as noises, aches and pains, and busy thoughts, instead of being able to focus on the matter at hand. These distractions pull us away from the present task, making it more difficult to accomplish our goals.

The APT-3 training you are about to begin is designed as a very challenging attention exercise. It will help if you are in the zone, or at least approaching the zone, when you start the exercise. This is important, because it will enable you to benefit more from the training.

The task preparation attentional exercises you are about to practice are a way of exercising your attention skills. They will help you improve your ability to focus on an activity, while redirecting your attention away from distractions. Through these attentional exercises, you can learn to remain aware of the distractions buzzing around you, while still choosing to stay on task. This critical skill not only will help you perform better during your APT-3 training, but also improve your effectiveness in everyday life.

Today’s APT-3 training session will begin with a guided attentional exercise called sustained attention - breathing. The exercise consists of an audio recording that will last about 10 minutes. While listening to the recording, you will find a comfortable sitting position, put on your headphones, and close your eyes.

This training increases your ability to manage distractions by teaching you how to actively focus on a particular task. As with any skill, it takes practice, and at times you may notice yourself pulled away by distractions during this exercise. That’s ok! With practice, the skills described in this guided exercise will start to come more easily. Even better, you will become better able to approach the zone in the space of a moment, rather than requiring the aid of a 10-minute guided exercise such as this.

Get comfortable, put on your headphones, close your eyes, and begin the exercise. Get into the zone and SCORE a goal for your brain power!

Client Name: _____

APT – 3 Level: _____

SCORE Week _____

Clinician Score Sheet: Performance Summary Across Trials⁷

Task Variables							
Speed: SLOW/FAST		Clinician Voice: MALE/FEMALE					
Date	Version	Trial	Error Pattern Start End Delayed Random	Strategies Observed** (See key below) (SI) =self-initiated strategy use (CP)=clinician prompted strategy use	Client Rating		
					Effort (1-10)	Motivation (1-10)	Accuracy (1-100)

**Strategies Observed

Task Completion		Motivation/Self Efficacy	Task Understanding
Re-Auditorizing (Re-Aud)	Breathing (Br)	Working toward a goal (Goal)	Repeating instructions (Rep)
Visualizing (Vis)	Pacing (Pace)	Self-talk (Talk)	Writing a reminder (Wrt)
Verbal self-cueing (Verb)	Body alert (Bod)	Rewards self (Rew)	
Counting on fingers (Fing)	Looking at screen (Scrn)	Breathing/Relaxation (Br)	
Closing eyes (Eyes)		Clinician encouragement (CI)	

Notes:

2: Sustained and Selective Attention

Session 1: What Is Attention?

Topic: Staying Focused			
Sustained and Selective Attention			
Session 1 Objectives (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
	Check: APT-3 Homework was:	Check <i>Homework APT-3 Generalization Form.</i>	5 Min
	Completed from previous week		
	Pending assignment for the week		
	What is Attention? Importance for memory	Refer to <i>The Memory System & What is Attention.</i>	10 Min
	Sustained		
	Selective		
	Alternating		
	Divided		
	Activity	Use examples in <i>What is Attention.</i> Highlight examples of attention breakdowns in <i>Specialist Smith Case Study.</i>	10 Min
	Identify type of attention used in daily activities.		
	Introduce case study Specialist Smith. Have client identify daily routine activities and match the type of attention used with activity, for example, driving and talking on the phone.		
	Introduce: Strategies for attention	Refer to <i>Optimizing Attention.</i> Identify strategies for Specialist Smith.	10 Min
	Homework: Present homework and discuss expectations.	Refer to <i>Identifying Distractions.</i>	15 Min
	Clients track when and how they lose attention in their environments and possible modifications.		

Session 2: APT-3 and Generalization Activity

Topic: Staying Focused Sustained and Selective Attention			
Session 2 Objectives (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
	Homework: Review status of group homework.		5 Min
	Address any questions regarding homework.		
	APT-3	Refer to <i>APT-3 Software</i> .	30 Min
	Complete: APT-3 Metacognitive and Generalization Activities	View performance on APT-3 Computer Program through <i>View Data on Performance</i> , then select the task to view or edit <i>Current APT Program>History (View)>Task Data Over Time or Detailed Task Data</i> .	15 Min
	Review performance on APT- 3 Software.	For generalization activity, refer client to <i>APT -3 Generalization Form</i> and refer to the <i>APT -3 Generalization Form Examples</i> in Appendix B.	
	Discuss how various strategies can improve performance, and discuss generalization to everyday activities.	Refer to <i>Clinician Score Sheet</i> in Appendix C to enter data.	
	Fill out clinician score sheet for current APT-3 session.	For information on APT-3 sections, refer to <i>APT-3 Manual</i> (available on APT-3 drive). ⁷	

Session 3: Attention Energy Management

Topic: Staying Focused Sustained and Selective Attention			
Session 3 Objectives (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
	Match activity to attention level	Refer to the following:	40 Min
	Identify cognitive demands of tasks.	<i>Attention Energy Management</i>	
	Identify consequences of tasks.		
	Have client identify tasks from different domains and identify level of difficulty and consequence for Specialist Smith, based on case study	<i>Specialist Smith Case Study</i>	
	Refer client to complete <i>Identify Your Attention Energy Demands</i> .	<i>Attention Energy Demands with Tasks</i>	
	Goal Review	Refer to <i>Clinician's Helper: Goal Attainment Scaling</i> .	10 Min
	Matching learned skills to goals	Refer to client's <i>Goal Attainment Scaling Forms</i> (located in the Goals section in the front of the client manual).	
	Reviewing Goals and progress		

Clinician's helper: goal attainment scaling

See Appendix D for examples.

- I. Purpose = Measures goal achievement/progress.
Rated on a continuum

+2	+1	0	-1	-2
much more than expected	somewhat more than expected	expected outcome	somewhat less than expected	much less than expected
			This is baseline for constructing GAS goals	

- II. How to construct or revise GAS goals:
 - A. Construct goals using **SMART**
 1. **S**pecific
 2. **M**easurable
 3. **A**ttainable *in the amount of time that client has in SCORE*
 4. **R**ealistic *for completion during engagement in SCORE*
 5. **T**imely
 - B. Prioritize goals from most important to least important (goal number one is most important)
 - C. For each goal, first define where client is currently performing (-1 on GAS scale)
 - D. After current performance spelled out, define expected level of outcome (0 on scale)
 - E. After expected level of outcome spelled out, define +1 and +2 goals
 - F. After +1 and +2 goals spelled out, define -2 goals
 - G. Follow-up/review at the end of each week

3: Memory and Learning

Session 1: The Memory System

Topic: How We Remember & Why We Forget			
Memory and Learning			
Session 1 Objectives (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
	Check APT-3 Homework.	Check <i>Homework APT-3 Generalization Form</i> .	5 Min
	Completed from previous week		
	Pending assignment for the week		
	Discuss the types of memory and the process of memory.	Refer to <i>The Memory System</i> .	5 Min
	Discuss effects of memory and learning difficulties in personal settings, work, and school settings.	Refer to <i>Daily Effects of Memory and Attention Difficulties</i> . Note: Highlight those areas discussed in this week's materials or those in which you can apply internal memory strategies to improve retrieval.	
	Discuss how internal memory strategies can improve encoding (introduce the difference between external and internal compensatory strategies).	Refer to <i>Internal Memory Strategies</i> .	20 min
	Visual imagery		
	Association		
	Rehearsal		
	First letter cues/mnemonics		
	Categorization		
	Story method		
	Rhymes		
	Active observation		
	Additional ways to improve encoding	Discuss "being an active communication partner."	
	Active communication partner		
	Activity: Remember 10 words using strategies	Refer to memory activity: <i>Word Recall (Part 1)</i> and <i>(Part 2)</i> .	10 Min
	Present Client with 10 words		
	Ask for immediate recall; discuss strategies used and help provide suggestions for better encoding.		
	Worksheet	Refer to <i>Everyday Ways to Use Internal Memory Strategies</i> and <i>Answer Key: Everyday Ways to Use Internal Memory Strategies</i> .	5 Min
	Identify strategies used during each situation presented.		
	Ask client to recall 10 words once again.	Refer to <i>Word Recall (Part 3)</i> .	5 Min
	Identify strategies used to recall words.		

Answer key: everyday ways to use internal memory strategies

Visual Imagery	Active observation	Association
Rehearsal	First letter cues	Rhymes (sayings)
Categorizing	Story method	Chunking

Identify the internal memory strategy that was used to improve memory and learning in the following situations.

Mary frequently gets lost. Now, when she gets directions, she asks for landmarks and creates pictures of them in her mind. She stated that it helps her to picture herself turning right past the drugstore, versus turning right at the second stoplight.

Which strategy is she using? _____ Visual Imagery _____

Brittany always forgets her friends' birthdays. She currently relies on her cell phone calendar to remember them. However, she has made it a personal goal to recall the dates independently.

Brittany has tried using repetition no success. Now, she is looking at the months and days. She is trying to make correlations to other holidays, events or even particular numbers that stand out. For instance, "Rebecca and Mary's birthdays are both on the 18th. However, one is in January and one is in November."

Which strategy might represent the technique she is using? _____ Association/Categorization _____

Dan just opened his own medical practice. He thinks it is very important to remember his patients' full names when he sees them in his office or in the community. Dan originally tried using their name frequently during their first few appointments. Dan said things like, "Have a nice day, Bob" versus just "Okay, have a nice day."

Which strategy is he using? _____ Repetition _____

When this strategy does not work, Dan tries to pair the name of the new person with someone he already knows with that name (such as a relative or even a famous person).

Which strategy is he using? _____ Association _____

Zoe has problems remembering information from conversations. Sometimes, she forgets facts she needs to remember. For example, she forgets things her friends might say like, “Meet me at the movie theater at 3:30 on Saturday so we can get the matinee discount.” Zoe forgets general information from conversations. For example, she forgets when a coworker tells her “My daughter just joined gymnastics this year and has been doing really well in competition.” Zoe always feels bad when she has to be reminded of these things.

Zoe realizes she can’t write down everything, so she has been trying out some new techniques. To remember dates and times from a conversation, she might repeat the important facts aloud (“So, I will meet you at the theater at 3:30 because that is 30 minutes before the movie starts.” or “Oh, so your daughter has been in gymnastics for one year? That’s great. How often does she compete?”). Zoe thinks repeating what she had heard is helpful.

Which strategy is she using? _____ Repetition _____

Michael is taking a safety course at his job and is nervous about the quiz at the end. There are many rules and steps to remember. He was trying to remember the steps to manipulate a fire extinguisher. Michael kept repeating the steps but they would not “stick.” A friend sitting next to him said, “My wife learned a way to remember the steps at her job by using the word PASS (Pull, Aim, Squeeze, Sweep).”

Which strategy is this? _____ First Letter Cues/Mnemonics _____

Adam is having difficulty remembering how many medications to take each day. He knows which medication is for what; however, Adam just cannot remember the correct doses (1 of this, 2 of that). Therefore, Adam came up with a solution to this problem. His solution is to state in the morning, “2 for pain, 3 for gain,” and state at night, “3 for head, 4 for bed.”

Which strategy is he using? _____ Rhyming _____

Erica has a new workout routine at the gym recommended by her physical therapist. She tried carrying around a note card with the activities written on it; however, she frequently lost the note card. Erica decided she needed to memorize the list of exercises instead. In the clinic, the exercises are typically written on paper or whiteboards. When Erica is memorizing the exercises, she tries to group them by the area in which she was working, such as “legs, arms” and “biceps, hamstrings.” With her new method, Erica is able to complete her workout consistently.

Which strategy is this? _____ Categorization/Association _____

Session 2: APT-3 and Generalization Activity

Topic: How We Remember & Why We Forget Memory and Learning			
Session 2 Objectives (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
	Homework: Review status of group homework.		5 Min
	Address any questions regarding homework.		
	APT -3	Refer to <i>APT-3 software</i> .	30 Min
	Complete: APT-3 metacognitive and generalization activities.	View performance on APT-3 Computer Program through <i>View Data on Performance</i> , then select the task to view or edit <i>Current APT Program>History (View)>Task Data Over Time or Detailed Task Data</i> .	15 Min
	Review performance on APT- 3 Software.	For generalization activity, refer client to <i>APT -3 Generalization Form</i> , and refer to the <i>APT -3 Generalization Form Examples</i> in Appendix B.	
	Discuss how various strategies can improve performance and discuss generalization to everyday activities.	Refer to <i>Clinician Score Sheet</i> in Appendix C to enter data.	
	Fill out clinician score sheet for current APT-3 session.	For information on APT-3 sections, refer to <i>APT-3 Manual</i> (available on APT-3 drive). ⁷	

Session 3: Internal Memory Strategies

Topic: How We Remember & Why We Forget Memory and Learning			
Session 3 Objectives (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
	Practice application of various internal strategies in different situations.	Refer to <i>Practice Makes Perfect – Learning Internal Memory Strategies</i> .	10 Min
	How external compensatory strategies/systems & assistive technology can improve encoding	Refer to <i>External Cognitive Aids to Improve Memory and Learning</i> .	10 Min
	Taking notes (outlines)	Refer to <i>Using External Strategies</i> and the <i>Underline, Highlight, & Note-taking</i> example.	
	Highlighting and underlining		
	Computers, smart phones, recorders, smart pens	Refer to <i>Intentional Reading Form</i> .	
	Intentional Reading Form		
	PQRST/SQR3 <i>Will be reviewed further during group session</i>	Refer to <i>PQRST & SQ3R</i> , defined as preview, question, read, state/summary, test (PQRST) and survey, question, read, recall/recite, review (SQ3R).	
	Remember facts from a short story that is read aloud.	Refer to <i>Transportation in the 1800s</i> . Refer to Answer Key: Transportation in the 1800s Quiz. Note: Client will practice strategies while reading during group session.	20 Min
	Read selected story aloud and have patients answer questions about the story.		
	Discuss strategies used to improve learning and/or recall of the information from the story.		
	Identify 4 situations in which you could apply one of the discussed strategies to improve memory and learning.		
	Goal Review	Refer to <i>Clinician's Helper: Goal Attainment Scaling</i> .	10 Min
	Matching learned skills to goals	Refer to client's <i>Goal Attainment Scaling Forms</i> (located in the Goal Setting section in the front of the manual).	
	Reviewing goals and progress		

Transportation in the 1800s^{9,10,11}

Read the following one-page passage aloud. You may read the entire passage or break it into sections. Ask your client to apply internal strategies while listening and try to remember as many facts as possible.

In most regions of the United States between the 1800s and 1860s, agriculture was the foundation of the economy. However, this is when each region began to branch out and invest in separate areas.

The North showed interest in industry, commerce, and finance, while the South invested in plantations and subsistence farms. Westerners invested in commercialized family farms, agricultural processing and manufacturing. The various regions began to rely on each other's specialties. With these changes, the need for improved transportation and communication became important.

Natural Transportation by Water

With improvements in transportation, movement and trade of materials increased significantly. The Mississippi and Ohio rivers began transporting materials from the North to the South on flat boats. In 1807, the introduction of the steamboat led the way to improving transportation. Robert Fulton's Clermont steamboat completed its first mission up the Hudson River from New York City, revealing that materials could now travel both ways on these southward flowing bodies of water. By 1815, steamboats were being used routinely to carry materials up the Mississippi and Ohio rivers.

Building of Roads and Canals

In the 1820s, improvements in East-to-West transportation began. Gravel-topped roads were built. East-to-West transportation also included travel on water. In 1825, the Erie Canal was built, connecting the great lakes with New York City and the Atlantic Ocean.

The Erie Canal is 363 miles long, much longer than the largest canal at that time, which was 28 miles long. In an attempt to justify building the Erie Canal, the canal was determined to decrease travel from Buffalo to New York City from 20 days to 6 days. In addition, this quick travel reduced freight charges from \$100 a ton to \$5 a ton. In 1835, just 10 years after it was built, the canal became so busy that it had to be made wider and deeper. Originally 40 feet wide and 4 feet deep, the canal was changed to 70 feet wide and 7 feet deep, resulting in the boom of the canal era. More canals were subsequently built because of the success of the Erie Canal.

Revolution of Railroads

Railroads were another form of transportation that began in the 1830s and continued to grow for decades afterwards. In 1830 the first locomotive traveled along 13 miles of track constructed by the Baltimore and Ohio Railroad. By 1850, the United States had approximately 9,000 miles of railroad track. A decade later, this number more than tripled to 31,000 miles of railroad track.

Developments in transportation not only decreased the travel time between many locations in the United States but allowed for cheaper transfer of goods. Overall, the revolution of transportation transformed the future of the economy.

Answer key: transportation in the 1800s quiz^{9,10,11}

Quiz: Transportation in the 1800s	
1	During the beginning of change to the nation's economy, in what three areas did the North show interest? <i>Industry, commerce, finance</i>
2	In 1807, what mode of transportation was introduced? <i>Steamboat</i>
3	In what year was the Erie Canal built? <i>1825</i>
4	What two natural bodies of water were the primary sources of transportation between the North and the South? <i>Mississippi and Ohio Rivers</i>
5	The length of the Erie Canal exceeded the longest canal of that time by how many miles? <i>$363-28 = 335$</i>
6	Ten years after the canal was built, the size was increased to what width and depth? <i>70 feet wide, 7 feet deep</i>
7	The Erie Canal decreased travel time from Buffalo to New York City from the previous 20 days to how many days? <i>Six</i>
8	In what year was the first locomotive launched? <i>1830</i>
9	How many miles did the first locomotive travel on its first run? <i>13 miles</i>
10	Transporting freight along the Erie Canal reduced freight charges from what cost to what cost per ton? <i>100 dollars per ton to 5 dollars per ton</i>

Clinician's helper: goal attainment scaling

See Appendix D for examples.

- I. Purpose = Measures goal achievement/progress.
Rated on a continuum

+2	+1	0	-1	-2
much more than expected	somewhat more than expected	expected outcome	somewhat less than expected	much less than expected
			This is baseline for constructing GAS goals	

- II. How to construct or revise GAS goals:
 - A. Construct goals using **SMART**
 1. **S**pecific
 2. **M**easurable
 3. **A**ttainable *in the amount of time that client has in SCORE*
 4. **R**ealistic *for completion during engagement in SCORE*
 5. **T**imely
 - B. Prioritize goals from most important to least important (goal number one is most important)
 - C. For each goal first define where client is currently performing (-1 on GAS scale)
 - D. After current performance spelled out, define expected level of outcome (0 on scale)
 - E. After expected level of outcome spelled out, define +1 and +2 goals
 - F. After +1 and +2 goals spelled out, define -2 goals
 - G. Follow-up/review at the end of each week

4: Planning and Organization

Session 1: Executive Functions

Topic: Mission Ready Planning & Organization			
Session 1 Objectives (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
	Homework: Check on APT-3 homework status	Check <i>Homework, APT-3 Generalization Form.</i>	5 Min
	Completed from previous week		
	Pending assignments for the week		
	Define Executive Functions.	Refer to <i>Executive Functions.</i>	10 Min
	Discuss the importance of organization, planning & time management.	Refer to <i>Importance of Planning, Time Management, & Organization.</i>	35 Min
	Identify factors that affect planning & organization.		
	Discuss effects of lack of organization on daily function.		

Session 2: APT-3 and Generalization Activity

Topic: Mission Ready Planning & Organization			
Session 2 Objectives (57 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
	Homework: Review status of group homework.		2 Min
	Address any questions regarding homework.		
	Refresher of Attentional Exercises (#2 <i>exercise</i>) technique as a cognitive primer for APT-3	Play <i>Selective Attention - Body Audio File (exercise #2)</i> .	10 Min
	<i>Selective Attention-Body</i> audio file can be activated on APT-3 screen with dedicated task button for file.		
	APT-3	Refer to <i>Attention Process Training Software</i> .	30 Min
	Complete APT-3 metacognitive and generalization activities.	View performance on APT-3 computer program through <i>View Data on Performance</i> then select the task to view or edit <i>Current APT-3 Program>History (View)>Task Data Over Time or Detailed Task Data</i> . For generalization activity, refer client to <i>APT-3 Generalization Grid</i> . For generalization activity, refer client to <i>APT-3 Generalization Form</i> , and refer to the <i>APT-3 Generalization Form Examples</i> in Appendix B. Clinician refers to <i>Clinician Score Sheet</i> in Appendix C to enter data.	15 Min
	Review performance on APT-3.		
	Discuss how various strategies can improve performance and discuss generalization to everyday activities.		
	Fill out clinician score sheet for current date.		

Session 3: Organizing Personal Papers

Topic: Mission Ready Planning & Organization			
Session 3 Objectives (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
	Activity: File Organization		
	Identify categories for file organization.		
	Sort personal papers (phone bills, car payments, utilities, Army forms, promotion packets, Medical Evaluation Board paperwork, Physical Evaluation Board, etc.) from <i>Soldier's shoebox</i> .	Refer to <i>Organizing Personal Papers</i> instructions for clinician.	40 Min
	Analyze method/plan that was used to complete this activity and the outcome. Which strategies were implemented and which strategies may improve the performance/outcome?		
	Goal Review/Modification	Refer to <i>Clinician's Helper: Goal Attainment Scaling</i> .	
	Match learned skills to goals.	Refer to client's <i>Goal Attainment Scaling Forms</i> (located in the Goal Setting section in the front of the manual).	10 Min

Organizing personal papers

Instructions for Clinician:

- Have the client sort/organize all of the papers (e.g., receipts, junk mail, catalogs, Army forms, bills) into appropriate categories
- Have the client apply metacognitive strategies throughout this process

Questions for clinicians to ask questions as they sort through the papers:

1. What categories/stacks do you think should be included?
2. How will you arrange papers within each category/stack?
3. How will you decide what can be discarded?
4. After you have sorted through your box, what should you do next?
5. If you decide to keep any of your papers, what is the best way to save them?

Clinician's helper: goal attainment scaling

See Appendix D for examples.

- I. Purpose = Measures goal achievement/progress.
Rated on a continuum

+2	+1	0	-1	-2
much more than expected	somewhat more than expected	expected outcome	somewhat less than expected	much less than expected
This is baseline for constructing GAS goals				

- II. How to construct or revise GAS goals:
- A. Construct goals using **SMART**
 1. **S**pecific
 2. **M**easurable
 3. **A**ttainable *in the amount of time that client has in SCORE*
 4. **R**ealistic *for completion during engagement in SCORE*
 5. **T**imely
 - B. Prioritize goals from most important to least important (goal number one is most important)
 - C. For each goal first define where client is currently performing (-1 on GAS scale)
 - D. After current performance spelled out, define expected level of outcome (0 on scale)
 - E. After expected level of outcome spelled out, define +1 and +2 goals
 - F. After +1 and +2 goals spelled out, define -2 goals
 - G. Follow-up/review at the end of each week

5: Prospective Memory and Assistive Technology

Session 1: Prospective Memory – What Is It?

Topic: Remembering to Remember Prospective Memory & Assistive Technology			
Session 1 Objectives (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
	Homework: Check APT-3 homework status.		
	Completed from previous week	Refer to <i>Homework APT -3 Generalization Form</i> .	5 Min
	Pending assignments for the week		
	Defining the types of memory	Refer to <i>The Memory System</i> . Refer to <i>Prospective Memory</i> .	10 Min
	Sensory		
	Short-Term		
	Long-Term		
	Define the stages of memory		
	Attention		
	Encoding		
	Consolidation		
	Retrieval		
	Define prospective memory.		
	Identify common memory difficulties and factors that affect memory.	Refer to <i>Daily Effects of Memory and Attention Difficulties</i> .	15 Min
	Discuss normalization of memory difficulties.		
	Discuss effects on daily function.		
	Review memory goals.		
	Review assistive technology questionnaire.	Refer to <i>External Memory Strategies</i> . Refer to <i>Tips for Technology and Selecting a System</i> .	20 Min
	Introduce multiple uses of high- and low-tech devices.		
	Determine efficiency of current compensatory system.		
	Make suggestions for modifications.		

Session 2: APT-3 and Generalization Activity

Topic: Remembering to Remember Prospective Memory and Assistive Technology			
Session 2 Objectives (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
	APT-3	Refer to <i>APT-3 Software</i> .	30 Min
	Complete APT-3 metacognitive and generalization activities.	View performance on APT-3 Computer Program through <i>View Data on Performance</i> , then select the task to view or edit <i>Current APT-3 Program>History (View)>Task Data Over Time or Detailed Task Data</i> . For generalization activity, refer client to <i>APT -3 Generalization Form</i> and refer to the <i>APT -3 Generalization Form Examples</i> in Appendix B. Refer to <i>Clinician Score Sheet</i> in Appendix C to enter data. For information on APT-3 sections, refer to <i>APT-3 Manual</i> (available on APT-3 drive).	15 Min
	Review performance on APT- 3 software.		
	Discuss how various strategies can improve performance and discuss generalization to everyday activities.		
	Fill out clinician score sheet for current APT-3 session.		
	Homework: Review status of group homework.		5 Min
	Address any questions regarding homework.		

Session 3: How Will You Remember?

Topic: Remembering to Remember Prospective Memory and Assistive Technology			
Session 3 Objectives (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes For this session, you will need the Model of Specialist Smith's home.	Time Allotted
	<p>Assign prospective memory task. (Client is instructed to tell clinician when there are 4 minutes left in the session. When client tells clinician that there are 4 minutes left in the session, client will be asked to do 'Homework' sheet. <i>Homework</i> can be completed very quickly. If client does not remember to tell clinician at 4 minutes left in session, he/she will do <i>Homework</i> outside of session).</p> <p>Note: Encourage client to use external cues and strategies (either visual or auditory).</p>	Refer to <i>Homework</i> .	1 Min
	<p>Activity: Use role play to practice using various compensatory devices during session. Train and practice implementing client's compensatory device to manage schedule, medications, budgeting, family birthdays, anniversaries, household responsibilities and other tasks.</p> <p>Note: If client moves through this exercise quickly, move to "Where are my car keys?" exercise</p>	Refer to <i>How Will You Remember...</i>	30 Min
	<p>Activity: Review <i>Where are my car keys?</i></p>	Refer to <i>Where are my car keys? (Part 1)</i> .	
	Direct client to look at model of Specialist Smith's home (model form) to complete the activity.		
	Review the ways that client can modify his/her home environment to make remembering things easier.	Refer to <i>Where are my car keys? (Part 2)</i> .	6 Min
	<p>Goal Review/Modification</p>	Refer to <i>Clinician's Helper: Goal Attainment Scaling</i> . Refer to client's <i>Goal Attainment Scaling Forms</i> (located in the Goal Setting section in the front of the manual).	10 Min
	Match learned skills to goals.		
	Complete <i>Homework</i> in session or discuss <i>Homework</i> that needs to be completed.	Refer to <i>Homework</i> .	3 Min
	Have client identify successful strategy if he/she completed activity and suggest alternate strategy if client did not complete activity successfully.		

Specialist Smith's home

The purpose of the SPC Smith's Home activity is to provide visual examples of compensatory strategies for everyday memory tasks such as remembering where you put your phone, or remembering to do daily chores. Organization and routines are key strategies in this activity. For this activity a model home was used; however, alternates may be the following:

- Pictures of rooms in a house accessed on the internet (entry way, kitchen or place frequented in the house)
- Pictures of the client's house
- The therapy room where sessions are conducted

Clinician's helper: goal attainment scaling

See Appendix D for examples.


- I. Purpose = Measures goal achievement/progress.
Rated on a continuum

+2	+1	0	-1	-2
much more than expected	somewhat more than expected	expected outcome	somewhat less than expected	much less than expected
			This is baseline for constructing GAS goals	


- II. How to construct or revise GAS goals:
- A. Construct goals using **SMART**
 1. **S**pecific
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 3. **A**ttainable *in the amount of time that client has in SCORE*
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 - B. Prioritize goals from most important to least important (goal number one is most important)
 - C. For each goal first define where client is currently performing (-1 on GAS scale)
 - D. After current performance spelled out, define expected level of outcome (0 on scale)
 - E. After expected level of outcome spelled out, define +1 and +2 goals
 - F. After +1 and +2 goals spelled out, define -2 goals
 - G. Follow-up/review at the end of each week

6: Alternating Attention

Session 1: Attention

Topic: Juggling Duties Alternating and Divided Attention			
Session 1 Objectives (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
	Homework: Check APT-3 Homework.	 You will need a set of individually cut address cards (included): <i>Names & Address Sorting List.</i>	5 Min
	Completed from previous week		
	Pending assignment for the week		
	Review the components of information processing.	Refer to <i>The Memory System</i> . Focus on short-term/working memory. <i>Working memory – process responsible for holding information in short term memory. Responsible for holding on to and manipulating information. Known as “temporary scratch pad.”</i>	5 Min
	Sensory		
	Short-term (Working) memory		
	Long-term memory		
	Review concept of alternating and divided attention.	Refer to <i>What is Attention?</i>	10 Min
	The idea of multitasking- is it really more efficient?		
	Activity: Complete alternating and divided attention task with address cards.	Refer to <i>Yes/No Trivia & Address Cards</i> . Complete <i>Metacognitive Rating Scale</i> for this activity.	20 Min
	<i>Metacognitive Rating Scale:</i> Discuss trade-off between accuracy of performance & speed		
	Assign <i>Juggling Duties Challenges</i> and discuss expectations.	Refer to <i>Juggling Duties Challenges</i> .	10 Min
	Client to identify situations where they alternate and multitask/alternate attention in their daily routine environment		

Answer key: YES/NO trivia

 YES/NO Trivia Answer Key Alternating and Divided Attention Task			
<p><i>Please answer each of the following questions you hear with a <u>Yes</u> or <u>No</u>.</i></p> <p><i>At the same time, I will give you instructions on how to separate this set of address cards. The order in which you must sort the cards will change. I will tell you when to change.</i></p> <p>Give client set of address cards.</p> <p>Instruct client to sort cards in alphabetical order as follows every 3-4 minutes:</p> <ol style="list-style-type: none"> Begin sorting by the name of business Now sort by contact person Now sort by city <p>Continue activity until client has completed at least 10 minutes. You may repeat the sorting order instructions.</p>			
	Questions	Answer	Response
1	Is today <u>Monday</u> (fill in day of the week)?	Y	
2	Is the year 2011?	N	
3	Is it night time?	N	
4	Are we in Houston?	N	
5	Are there 256 days in a year? <i>365</i>	N	
6	Is this an Air Force base?	N	
7	Did you have breakfast?	Y/N	
8	Do you like playing sports?	Y/N	
9	Are the Spurs your favorite sports team?	Y/N	
10	Have you been to the DFAC today?	Y/N	
11	Is it rainy outside?	Y/N	
12	Did you drive here today?	Y/N	
13	Is the Fourth of July Holiday coming up?	Y	

Address cards: name & address sorting list

<p>Two Barrel Gun Range ATTN: Lance Lott 6103 Chester Road Boise, Idaho</p>	<p>Allstar Appliance Mart ATTN: Sara Tillman 7199 Stave Road Queens, New York</p>
<p>Modern Manufacturing ATTN: Ethan Wolfe 6907 Caracol Drive Bridgewater, Massachusetts</p>	<p>Silver and More Jewelry ATTN: Anna Smithe 2730 Wilson Ave Seattle, Washington</p>
<p>Loose Cannon Gun Range ATTN: Victor Dowdy 805 Pinon Circle Sandusky, Ohio</p>	<p>Integrated Computer Consultants ATTN: Becky Ellsworth 37920 Orion Blvd Birmingham, Alabama</p>
<p>United Plumbing Service ATTN: David Hammoc 27492 Rittaman Road White Plains, New York</p>	<p>Merritt Excavation ATTN: Paul Merritt 5000 N Loop 289 Allen Park, Georgia</p>

<p>Wilford Shooting Supply ATTN: Darren Day 9123 North Shore Drive Wheaton, Ohio</p>	<p>Appraisals R Us ATTN: Perry Guilde 6371 Howard St South Bend, Indiana</p>
<p>Four Corners Electronics ATTN: Jacob Brown 102 Mountain Ave Manhattan, New York</p>	<p>Investing Your Way ATTN: Rodrick Cantburry 12304 Woodlawn Ave Greenfield, Pennsylvania</p>
<p>Choice Chiropractic ATTN: Beth Jackson 14573 Center Ave Nashville, Tennessee</p>	<p>Rainbird Irrigation ATTN: Gerry Giford 2587 Lester Road San Jose, California</p>
<p>University Book Store ATTN: Sandra Raff 5672 Great South Road East Lansing, Michigan</p>	<p>Ice Cream You Scream ATTN: Susie Landry 4973 Merry Ave Naples, Florida</p>

<p>Fantastic Furniture ATTN: Anthony Jerrod 7001 Stahl Road Northfield, Minnesota</p>	<p>Sandy's Graphics and Tees ATTN: Matthew Bitters 1590 Courage Road Scottsdale, Arizona</p>
<p>Serenity Security Systems ATTN: Janelle Whitlock 30032 Tundra Road Cleveland, Ohio</p>	<p>Everyone's Hero Shooting ATTN: Robert Crona 587 Oats Boulevard Los Angeles, California</p>
<p>Graples Convenient Store ATTN: Seth Goode 17648 Meadowlark Lane Myrtle Beach, South Carolina</p>	<p>Mother's Mattress Gallery ATTN: Alejandro Juarez 9008 Pilsner Road Richfield, Utah</p>
<p>Q-T Tuxedos ATTN: Taryn Johnson 543 Frost Street Fargo, Minnesota</p>	<p>Green Tree Mortgage ATTN: Dora Fiscal 40167 Frozen Street Anchorage, Alaska</p>

<p>Quality Subs ATTN: Melvin Coughlin 55870 Tundra Road Seattle, Washington</p>	<p>Iridescent Salon ATTN: Sally Kross 1349 Red Dye Road Tempe, Arizona</p>
<p>Utterly Different Toys ATTN: Karin Wales 999 Punch Lane Blaine, Washington</p>	<p>Freedom Furniture Repair ATTN: Faith Ferrity 37004 Rover Drive Dover, Delaware</p>
<p>Northern Remodeling ATTN: Erin Pipers 222 Vault Road Hibbing, Minnesota</p>	<p>Winner's Circle Guns and Ammo ATTN: Michael Sutton 631 Gang Ave Westland, New York</p>
<p>Gateway Jewelry ATTN: Valerie Luna 397 Ariel Lane Memphis, Tennessee</p>	<p>Aeronautics of the West ATTN: Alton Smith 3017 Ocean Road Carmel, California</p>

<p>Brandon's Bait and Tackle ATTN: Mitch Brandon 2340 Pier Ave Lake Lansing, Michigan</p>	<p>Home Away From Home Hotel ATTN: Gabriel Saenz 92673 Azura Circle Syracuse, New York</p>
<p>Equal Equity ATTN: John Stockton 6372 Durbin Drive Bangor, Maine</p>	<p>Pistol Packin' Donna ATTN: Donna Terry 40879 Cherry Drive Tampa, Florida</p>
<p>Computer Solutions ATTN: Jory Allison 13467 Hathaway Jackson, Wyoming</p>	<p>Nanna's Nail Salon ATTN: Nellie Fry 741 Drowning Drive Madison, Wisconsin</p>
<p>Nuts and Bolts Hardware ATTN: Harry Zimmerman 2014 Mesquite Ave Chicago, Illinois</p>	<p>Dentures Dental ATTN: Dale Young 134 Candy Street Santa Rosa, California</p>

<p>Ferngully Florist ATTN: Rosa Medallion 3057 Budding Lane Honolulu, Hawaii</p>	<p>Slick Willie's Tires ATTN: Murphy Stiles 4691 Cross Court San Antonio, Texas</p>
<p>Terrible Tees ATTN: Josia Auburn 23401 Burnt Tree Street Denver, Colorado</p>	<p>Mayberry Range ATTN: Martin Sutton 7395 Pomeranian Court Columbus, Ohio</p>
<p>Conrad's Motor Company ATTN: Saul Merin 13975 Atwater Court Buffalo, New York</p>	<p>Cuticles Spa ATTN: Bethany Boss 69270 Lions Denver, Colorado</p>
<p>Targets Galore ATTN: Jeffrey Goodenough 46931 Sheffield Court Mansfield, Illinois</p>	<p>Killer Security Services ATTN: Kidd Knight 91800 Millers Street Pittsburg, Pennsylvania</p>



<p>Southern Lawns Landscaping ATTN: Miranda Funde 17383 Ironhorse Drive Helotes, Texas</p>	<p>Albuquerque Appliance Mart ATTN: Karol Cruise 9797 Warehouse Road Albuquerque, New Mexico</p>
<p>Advanced Heating and Cooling ATTN: Melvin Winters 7777 Jockey Lane Charleston, Virginia</p>	<p>Tree Trimming Solutions ATTN: Louis McPeters 22933 Pewter Eugene, Oregon</p>
<p>Valley Realty ATTN: Scott Manheim 7871 Jamestown Blvd Hershey, Pennsylvania</p>	<p>The Split End Salon ATTN: Emily Culbertson 9000 Eisenhower Blvd Hollywood, California</p>
<p>Behavior Help Line ATTN: Laurence Carol 4370 Green Mountain Road Chicago, Illinois</p>	<p>Colossal Comedy Club ATTN: Jeremy Fowl 891 Captain Street Annapolis, Maryland</p>

<p>Cheery Cleaners ATTN: Pauline Cotton 11100 Dryer Toronto, Canada</p>	<p>Charlie's Barber Shop ATTN: Charlie Stanton 5647 Troll Drive Roosevelt, Utah</p>
<p>Gold Gloves Gym ATTN: George Mathis 4872 Valor Circle Redford, Michigan</p>	<p>Kidz Korral Learning Center ATTN: Debra Carson 8300 Sage Drive Springfield, Illinois</p>

Session 2: APT-3 and Generalization Activity

Topic: Juggling Duties Alternating and Divided Attention				
Session 2 Objectives: (50 minutes)				
<input checked="" type="checkbox"/>	Lecture topic		Notes	Time Allotted
	APT-3		Refer to <i>APT-3 Software</i> .	30 Min
	Complete APT-3 Metacognitive and Generalization Activities		View performance on APT-3 Computer Program through <i>View Data on Performance</i> , then select the task to view or edit <i>Current APT-3 Program>History (View)>Task Data Over Time or Detailed Task Data</i> . For generalization activity, refer client to <i>APT -3 Generalization Form</i> and <i>APT -3 Generalization Form Examples</i> in Appendix B. Refer to <i>Clinician Score Sheet</i> in Appendix C to enter data. For information on APT-3 sections, refer to <i>APT-3 Manual</i> (available on APT-3 drive). ⁷	15 Min
		Review performance on APT- 3 Software.		
		Discuss how various strategies can improve performance and discuss generalization to everyday activities.		
		Fill out clinician score sheet for current APT-3 session.		
	Review status of group homework.			5 Min
		Address any questions regarding homework.		

Session 3: Audio Recording and Zip Code Locations

Topic: Juggling Duties Alternating and Divided Attention			
Session 3 Objectives: (50 minutes)			
<input checked="" type="checkbox"/>	Lecture topic	Notes	Time Allotted
		 For this session you will need 3 1-minute <i>audio recordings</i> (not included) with accompanying comprehension questions	
	Activity: Cancellation task with auditory distracter		
	Allow patient 1 minute to review questions in <i>audio recording</i> questions.	Refer to <i>Audio Recording Questions</i> .	
	Instruct patient to complete locate selected with <i>Zip Code Map</i> while radio story plays.	Refer to <i>Zip Code Location and Zip Code Map</i> .	20 Min
	Have patient identify possible strategies to use during task.	Refer to <i>Internal Memory Strategies & External Cognitive Aids</i> for ideas.	
	Play audio recording.	Play <i>audio recording</i> . 	
	Metacognition		
	Have patient complete <i>Metacognitive Rating Scale</i> .		
	Discuss performance on tasks.	Refer to <i>Metacognitive Rating Scale</i> .	15 min
	Highlight effect of completing a timed task.		
	Discuss external and internal strategies. What strategies used?		
	Program Wrap Up		
	Review personal goals and the Goal Attainment Scaling process.	Refer to <i>Clinician's Helper: Goal Attainment Scaling</i> . Refer to client's <i>Goal Attainment Scaling Forms</i> (located in the Goals section in the beginning of the manual).	15 Min
	Discuss the importance of generalization and application of learned skills.	Refer to <i>Score Summary</i> .	

Audio recording questions

Instruct client as follows:

You will hear a set of audio recordings and then answer the following questions. At the same time, you will complete the Zip Code Location task.

Refer to *Zip Code Location*.

Take 1 minute to review the questions before we begin.



Play chosen audio recordings

<i>Questions</i>	<i>Responses</i>
1	
2	
3	
4	
1	
2	
3	
4	
1	
2	
3	
4	

Clinician's helper: goal attainment scaling

See Appendix D for examples.

- I. Purpose = Measures goal achievement/progress.

Rated on a continuum

+2	+1	0	-1	-2
much more than expected	somewhat more than expected	expected outcome	somewhat less than expected	much less than expected
			This is baseline for constructing GAS goals	

- II. How to construct or revise GAS goals:

- A. Construct goals using **SMART**

1. **S**pecific
2. **M**easurable
3. **A**ttainable *in the amount of time that client has in SCORE*
4. **R**ealistic *for completion during engagement in SCORE*
5. **T**imely

- B. Prioritize goals from most important to least important (goal number one is most important)

- C. For each goal first define where client is currently performing (-1 on GAS scale)

- D. After current performance spelled out, define expected level of outcome (0 on scale)

- E. After expected level of outcome spelled out, define +1 and +2 goals

- F. After +1 and +2 goals spelled out, define -2 goals

- G. Follow-up/review at the end of each week

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Appendix A: Acronyms

APT	Attention Processing Training
ASD	Autism Spectrum Disorder
CAOT	Canadian Association of Occupational Therapists
COPM	Canadian Occupational Performance Measure
CP	clinician prompted (strategy use)
DoD	Department of Defense
GAS	Goal Attainment Scaling
MPT	Matching Person & Technology
mTBI	mild traumatic brain injury
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OND	Operation New Dawn (new name for OIF)
PQRST	preview, question, read, state/summary, test
SCORE	Study of Cognitive Rehabilitation Effectiveness
SI	self-initiated (strategy use)
SMART	specific, measurable, attainable, realistic, timely (goals)
SQ3R	survey, question, read, recall/recite, review
TBI	traumatic brain injury
VA	Department of Veterans Affairs

Appendix B: APT-3 Generalization Form Examples

Below are examples of how each APT-3 area can be related to everyday tasks that you encounter.

You may refer to these examples when completing your APT-3 Generalization Form.^{7,8}

<p>Basic Sustained</p>	<p><i>The ability to maintain attention during continuous repetitive activities</i></p> <ul style="list-style-type: none"> ▪ Listening for your name in roll call ▪ Listening to the traffic report for your route home ▪ Listening for business closures on the news following an ice storm ▪ Reading the paper ▪ Sorting emails during your 30 minutes of administration time
<p>Selective Attention</p>	<p><i>Selectively processing target information while inhibiting responses to non-target information</i></p> <ul style="list-style-type: none"> ▪ Listening to your spouse in a busy waiting room ▪ Reading emails on your smartphone in a noisy area ▪ Filling out paperwork in a busy office ▪ Doing tasks in your office with construction next door ▪ Making dinner, with your children playing in the background
<p>Executive Control, Working Memory</p>	<p><i>Process for holding onto and manipulating information in one's head such as during mental calculations</i></p> <ul style="list-style-type: none"> ▪ Determining a tip at a restaurant ▪ Identifying an alternate route home ▪ Determining travel departures and arrival times (especially when changing time zones) ▪ Converting measurements while baking or building

<p>Executive Control Suppression</p>	<p><i>Ability to control impulsive responding</i></p> <ul style="list-style-type: none"> ▪ Not hitting the gas when a light turns green and there is a car in front of you ▪ Speaking before it is your turn, or interrupting in a conversation
<p>Executive Control Alternating</p>	<p><i>Ability to shift one's focus of attention (between/ among tasks)</i></p> <ul style="list-style-type: none"> ▪ Making dinner as your children periodically call on you for help with homework ▪ Answering the phone and responding to emails during your 30-minute break

<p align="center">You may use these basic titles when filling out your APT3 Generalization Form</p>			
	<p>Sustained Attention Auditory & Visual</p>		<p>Suppression (inhibition) Auditory & Visual</p>
	<p>Selective Attention</p>		<p>Alternating Attention Auditory</p>
	<p>Working Memory</p>		<p>Alternating Attention Visual</p>

Appendix C: Clinician Score Sheet⁷

Client Name: _____ APT – 3 Level: _____

Clinician Score Sheet: Performance Summary Across Trials

Task Variables							
Speed: SLOW/FAST		Clinician Voice: MALE/FEMALE					
Date	Version	Trial	Error Pattern Start End Delayed Random	Strategies Observed** (See key below) (SI) =self-initiated strategy use (CP) =clinician prompted strategy use	Client Rating		
					Effort (1-10)	Motivation (1-10)	Accuracy (1-100)

**Strategies Observed

Task Completion		Motivation/Self Efficacy	Task Understanding
Re-Auditorizing (Re-Aud)	Breathing (Br)	Working toward a goal (Goal)	Repeating instructions (Rep)
Visualizing (Vis)	Pacing (Pace)	Self-talk (Talk)	Writing a reminder (Wrt)
Verbal self-cueing (Verb)	Body alert (Bod)	Rewards self (Rew)	
Counting on fingers (Fing)	Looking at screen (Scrn)	Breathing/Relaxation (Br)	
Closing eyes (Eyes)		Clinician encouragement (Cl)	

Notes:

Appendix D:

Goal Attainment Scaling Goal Examples

Goal:	I will improve my attention in order to read my college coursework without getting distracted
+2	I will read my college textbook for 60 minutes before requiring a 10 minute break
+1	I will read my college textbook for 45 minutes before requiring a 10 minute break
0	I will read my college textbook for 30 minutes before requiring a 5-10 minute break
-1	I read my college textbook for 20 minutes before requiring a 5-10 minute break
-2	I will be able to read my college textbook for less than 20 minutes before requiring a 5-10 minute break
Goal:	I will improve efficiency of completing tasks at work with fewer distractions and better time management.
+2	I will be able to work on work assignments (at desk and on the computer) for 60 minutes before requiring a 10 minute break
+1	I will be able to work on work assignments (at desk and on the computer) for 45 minutes before requiring a 5 minute break
0	I will be able to work on work assignments (at desk and on the computer) for 35 minutes before requiring a 5 minute break
-1	I work on work assignments (at desk and on the computer) for 25 minutes before requiring a 5 minute break
-2	I will be able to work on work assignments (at desk and on the computer) for less than 25 minutes before requiring a 5 minute break
Goal:	I will be able to pay attention to what my spouse tells me and remember more of what I'm told.
+2	I will repeat the information told to me in conversations immediately, independently
+1	I will repeat the information told to me in conversations immediately with a minimal cue from my spouse
0	My spouse will have to remind me 1 time, the information provided during conversations
-1	My spouse reminds me 2 or more times, information provided during conversations
-2	My spouse will remind me of information from conversations daily and complete the tasks that I forget

Goal:	I will remember to take my medications without cues from my spouse or family.
+2	I will remember my medication with my alarms and no reminders from my spouse
+1	I will remember my medication with my alarms and my spouse will have to remind me less than 4 times a week
0	My spouse will have to remind me 1 time per day of my medications
-1	My spouse reminds me 2 or more times per day of my medications
-2	My spouse will give me my medications each dose, each day
