Supplementary Table 1. Cognitive Training Programs: Listing of Target Skills and Cognitive Exercises

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| **Target Skills** |  | **Name of Cognitive Program** |  | **Brief Description** |
| **Phase I – Foundations**  |  |  |  |  |
| Processing speed and sustained attention |  | Visual Tracking I |  | Tracking a line moving at an increasingly rapid pace and responding to occasional color changes |
| Processing speed, attention, and inhibition  |  | Simple Choice Visual Reaction |  | Responding as quickly as possible to colored target appearance and inhibiting responses to stimulus of different color |
| Processing speed and attention to multiple dimensions |  | Simultaneous Multiple Attention |  | Tracking up to four lines moving at an increasingly rapid pace and responding to occasional targets in each |
| Processing speed, attention to multiple objects, and inhibition |  | Frogger |  | Moving a frog along a path and avoiding oncoming objects, with increasing difficulty due to increasing speed and number of objects |
| Working memory – verbal |  | Sequenced Recall Digits Visual |  | Immediate memory for visually presented digit sequence, forward and reversed |
| Working memory – verbal |  | Sequenced Recall Words Visual |  | Immediate memory for sequence of visually presented words, with number of words increasing over trials |
| Working Memory – spatial |  | Spatial Memory |  | In a sequence of rooms on computer screen, need to choose correct door to enter the next room, with each entered room looking identical |
| Immediate spatial and object memory |  | Frippeltration |  | Immediate memory for objects, colors, or sound associated with a position in a grid, to allow matching the squares with identical features |

**Phase II – Intermediate Skills**

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| Object memory – intermediate level |  | Recognition Recall |  | Recognition of pictures of objects after a 5-180 second delay, selecting from a larger array of displayed and non-displayed objects |
| Verbal memory and categorization – intermediate level |  | Verbal Memory Categorizing |  | Verbal memory after 1-60 second delay of words and their semantic categorization |
| Visual-verbal associative memory – intermediate level |  | Paired Associates Recall |  | Memory for pairings of graphics designs and numbers after delays of 1-60 seconds |
| Verbal learning and memory – intermediate level |  | The Phone Message |  | Memory for information presented within a simulated phone message, with questions in a multiple-choice format |
| Problem Solving – simple visual categorization and reasoning |  | Frippel Place |  | Placement of cartoon characters in a simulated apartment house based on their physical characteristics |
| Problem Solving – simple component analysis, pattern recognition, and reasoning |  | Factory |  | Placement of machines on an assembly line in the correct order to create geometric products, using visual reasoning and problem-solving skills to analyze component processes, recognize patterns and sequences, and predict outcomes |
| Problem Solving – simple reasoning to achieve a specific goal |  | Stocktopus |  | In a simulated stock exchange work setting, participant makes a series of trades of objects to acquire the goal objects |
| Problem Solving – simple visual sequential reasoning |  | Pyramids |  | Starting with a pyramid formed of different sizes of disks on a post, participant moves the disks, one at a time, so that they end up as a correct pyramid on another post |

**Phase III – Complex Skills**

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| Complex problem solving in a game-like setting |  | Carmen Sandiego |  | Participant is detective who must gather clues by asking questions of witnesses and travelling to different locations in order to solve thefts |
| Complex reasoning and problem solving in a simulated work setting |  | Math for the Real World |  | Simulation in which participant is a roadie with a hot new rock band, faced with varying situations in which negotiations for cash are needed to shoot a video to promote the band |
| Complex reasoning and problem solving in a simulated work setting |  | Grammar for the Real World |  | Contextualized as a TV studio in which the participant is an intern who must take on editing and writing assignments for different show business professionals |
| Complex reasoning and problem solving in a simulated work setting |  | Ice Cream Truck |  | Simulated business of managing an ice cream truck, with required complex decisions involving selecting a product mix, setting prices, and arranging advertising |
| Complex reasoning and problem solving involving multilevel strategy situations |  | Mission Think  |  | Participant solve five different strategy games that are multi-level and have no time limits, using a range of verbal and visual information |
| Complex reasoning and problem solving using hypothesis testing and error correction skills |  | Mountain Rescue |  | A simulated mountain rescuer uses logical thinking skills involving comparing, sorting, graphing, testing hypotheses, sequencing, mapping, testing cause and effect, spatial reasoning, predicting, following directions, and organizing data |
| Complex reasoning and problem solving involving logical and creative thinking in adventurous game-like setting |  | Logic Quest |  | A simulated adventure in which participant helps captives make their escape from enemies using combinations of features of captives to overcome obstacles using deductive logic and creative reasoning |