Name: Carol Diane Gray | DOB: 8/2/1962 | MRN: 111012030007 | PCP: William C. Dam, MD

Progress Notes

Melissa A. Lancaster, PhD at 5/19/2022 8:45 AM

NEUROPSYCHOLOGICAL EVALUATION
CONFIDENTIAL

Carol Diane Gray
26131 W Elm Tree Rd
Antioch IL 60002-9794
D.O.B.: 8/2/1962
MR Number: 111012030007
Referring Physician: Grindstaff, Paul L., MD
DOE: 5/19/2022

Ms. Carol Diane Gray is a 59 y.o., right handed, white female who was referred for a neuropsychological evaluation due to memory concerns. She was previously seen for a video interview on 04/06/2022; *information collected at that encounter will be presented in italics.* She was seen in the clinic on this date for administration of a battery of neuropsychological tests (attached).

HISTORY OF PRESENTING CONCERNS:
Ms. Gray reported concern about cognitive decline since approximately 2017. At the time, she said she was in a paralegal class and her thinking "got really fuzzy." Per records, she felt an electric sensation throughout her body with a transient episode of inability to talk or organize her thoughts. Since that time, she reported gradual cognitive decline. Her daughter also noted a gradual decline but feels there has been more rapid decline since the pandemic began. Ms. Gray reported that she is most concerned about difficulty expressing herself and trouble coming up with words. Her daughter said she struggles to articulate her thoughts, stating she often fills in statements with similar but inappropriate words. Regarding memory, her daughter said she will repeat herself multiple times in a conversation and is repetitive in asking questions within short time frames. They reported that she needs repetition because she tends to lose track of what was just said. Her daughter feels she is having more trouble with attention and concentration, although she indicated that to some extent these issues are longstanding. Her daughter said she will stare off during conversation and then ask what they were talking about. They reported that she has always had difficulty with organization and keeping track of her belongings, but these issues have worsened. Her daughter said she has always been messy but would eventually spend time re-organizing; now she struggles to do so.

While no concern for behavioral changes were mentioned in interview, review of records indicates that a few days later on 04/27/2022, her daughter called her neurologist's office and reported that the patient went over to her boyfriend's son's house and broke his windows with rocks and then got into a minor car accident. Her daughter also reported at this time that the patient was "obsessed with rocks."

IADLs (Instrumental Activities of Daily Living)
She is reportedly independent in performing basic daily tasks (e.g. bathing, showering, grooming, dressing). She overall reported no difficulty completing household duties. Her daughter said she has always been messy, but she is having more difficulty cleaning up when her messes get to a certain threshold; she said she used to take a few days and organize her desk, etc., but now this is difficult. Her daughter pointed out that she is leaving

drawers open in the kitchen. She said she has trouble remembering to take her medication, which is longstanding. Her daughter has been managing her appointments. She is driving occasionally, but only locally. Her daughter said there were two incidences where she got too close to other cars, and another time when she saw the light as red but others were honking at her to go. Her significant other predominantly manages the finances.

RELEVANT NEURODIAGNOSTICS

MRI of the brain on 05/27/2021 was read as follows:
"The ventricles and cortical sulci are prominent in size due to mild age-related volume loss. There are multiple small foci of increased T2-weighted signal intensity in the supratentorial white matter bilaterally. These are nonspecific with differential considerations including age indeterminate ischemia, inflammation, demyelination, and gliosis. Small foci such as these may also be seen in migraine headache patients. No restricted diffusion to suggest acute infarction is seen. No abnormal brain enhancement is identified. The exam is not performed as a high-resolution study of the sella turcica however a partial empty sella is noted. There is noted to be a focal area of extra-axial fluid signal intensity in the inferomedial aspect of the middle cranial fossa on the left which does not enhance with contrast material which is nonspecific but is most suggestive of small arachnoid cyst measuring 1.5 cm x 0.7 cm in transaxial diameter.

IMPRESSION: Nonspecific white matter changes as discussed above without acute infarction or abnormal brain enhancement. Partial empty sella. Probable small arachnoid cyst in the inferomedial aspect of the middle cranial fossa on the left. Follow-up is advised as clinically warranted."

PAST MEDICAL/SURGICAL HISTORY

Past Medical History:

Diagnosis	Date
• Allergy	
• Memory loss	

Past Surgical History:

Procedure	Laterality	Date
• ENDOMETRIAL ABLATION *Age 53*		
• KNEE SURGERY		1974
• OTHER SURGICAL HISTORY *Fatty tumor removed from leg*		1997
• SHOULDER SURGERY *tumor removed*		2007

Head injury/Concussion: None reported. However, she said she was a pitcher on a softball team as a child and also taught martial arts, so she knows she was hit in the head.
Headaches: She reported an occasional feeling of pressure in her head.
Seizures: None reported.
Stroke: None reported.
Chemical Exposure: None reported.

Pain: She said she has occasional finger pain from a past fracture. She also had a meniscus tear playing soccer in the past, with some occasional residual knee pain.
Motor Functioning: She said that recently she could not raise her right arm for a brief period, although this resolved. Her daughter said that she has been having trouble grabbing things, which appears related to coordination; she may reach for an object and miss it.
She also has difficulty with balance; she struggles to put her pants on, etc. They reported no tremors.
Autonomic Dysfunction: She said she has had some vertigo in the past that caused her to fall twice.

Sensory Changes: No reported issues.

Sleep: She reported no issues with sleep onset or maintenance. She estimated that she receives 8 1/2 hours of sleep per night. Her daughter said she is a "night owl." She may fall asleep during the day occasionally.

Hearing: No reported issues.
Vision: No reported issues.
Hallucinations: None reported.

Alcohol: She estimated that she has 1-2 alcoholic beverages per week.
Tobacco Use: None.
Marijuana Use: None.
Illicit Drug Use: None.
Caffeine Intake: She said she used to be a big caffeine drinker but drinks a lot less lately.
Appetite: No reported issues.

CURRENT MEDICATIONS

Current Outpatient Medications:
- ketoconazole 2 % shampoo, , Disp: , Rfl:
- lidocaine 2 % Solution, 5 mLs by Mucous Membrane route 2 (two) times daily as needed. (Patient taking differently: 5 mLs by Mucous Membrane route 2 (two) times daily as needed. PATIENT REPORTS NOT TAKING THIS MEDICATION-9/29/21), Disp: 120 mL, Rfl: 0
- multivitamin/iron/folic acid (CENTRUM WOMEN ORAL), Take 1 tablet by mouth daily., Disp: , Rfl:

FAMILY MEDICAL HISTORY

Family History

Problem	Relation	Age of Onset
• Heart Disease	Mother	
• Hypertension	Father	
• Stroke	Father	

They also reported a family history of cancer. They reported no family history of dementia or other neurologic illness. There is a family history of ADHD in her brother and a nephew; her children also have symptoms.

PSYCHIATRIC HISTORY

She reported no history of psychiatric treatment, although her daughter said she has struggled with depression and anxiety in the past; she would procrastinate on big projects and cram them into a few weeks, sacrificing her lifestyle and sleep, which led to "emotional instability." Currently, she said she is "freaking out" about her cognitive issues. She said that being alone all the time secondary to the pandemic has also impacted her mood.

SOCIAL HISTORY

Born/Raised: She has a brother.
Languages Spoken: English
Education: She reported that she graduated with high honors with a bachelor's degree from the University of Kansas and was on the debate team. She has marketing certificates from UIC.
Learning Difficulties: She reported that she was an above average student with no history of learning difficulties, grade retention, or utilization of special education services. Her daughter said she is a long-time procrastinator but "highly competent."
Vocation: She predominantly worked in consulting and market research for the food service industry. She said she was very successful in the past but could not perform her past duties now. She last worked in 2019 as a martial arts instructor.

Disability: *No.*
Marital Status: *Divorced.*
Children: *She has two children.*
Current Living Situation: *She lives with her boyfriend, Bob.*
Social Support: *She is not socializing much recently due to the pandemic. However, she said she has two good friends that she sees once or twice a month. Her daughter said that both of her children are "introverts."*
Hobbies: *Her daughter said that she is currently watching a lot of television, mostly news, which she has never done before; her daughter is concerned that this is a source of stress. She said she has recently started ceramics and is reading more again (she was always an avid reader in the past but had done of this lately). She is also managing a Shar Pei group on Facebook.*
Physical Activity: *She is doing yoga videos but is much less active than she used to be.*

BEHAVIORAL OBSERVATIONS

Ms. Gray presented on time for her appointment. Dress and hygiene were within normal limits. She said that she slept "like a rock." She reported no current pain. She evidenced a bilateral hand tremor. Vision and hearing were adequate for testing; she wore reading glasses. However, she evidenced some difficulties with eye tracking and grasping objects in front of her. Speech was fluent and within normal limits regarding volume, intonation, prosody, and articulation. She evidenced significant wordfinding difficulties, and comprehension also appeared impaired. She demonstrated an appropriate range of affect. Mood appeared to fluctuate between euthymic and anxious. She was pleasant and cooperative; behavior was appropriate throughout the evaluation. During testing, she had significant difficulty understanding task instructions, and she needed task instructions repeated and/or clarified often. She appeared to put forth good effort and performed at expectation on dissimulation measures. Results are considered to be a valid representation of her current neuropsychological status.

TEST RESULTS

Ms. Gray was poorly oriented to place and time (WMS-III Information and Orientation = 8/14). She scored in the average range on a measure of word reading, which serves as an estimate of premorbid intellectual functioning; estimated intellectual capacity based on demographic factors was in the average range. She performed in the average range on a fund of knowledge measure.

Auditory attention and working memory was in the borderline impaired range overall on a span memory task; she correctly recited 4 digits forward (borderline impaired) and 2 digits backwards (borderline impaired). A trial of this task requiring number sequencing was discontinued. A measure of processing speed was discontinued due to difficulty comprehending task instructions. Fine motor speed and dexterity was in the very impaired range in her hands bilaterally; she had significant difficulty staying on task and completing items in order.

She performed in the very impaired range across measures of memory. Learning of a list of 12 words across trials was in the impaired range, with 2, 3, and 7 words recalled across 3 learning trials (a positive learning curve). Memory for the words after a delay was in the impaired range (0 words). Recognition of the words amongst distracters was in the impaired range, as she correctly endorsed 9 target words and made 4 false positive errors. Immediate memory for short stories was in the impaired range, while delayed memory for the stories was also impaired. Recognition of story elements was in the impaired range. Learning of a series of figures was in the impaired range. Delayed memory for the figures was in the impaired range, with no information correctly recalled. Recognition of the figures was in the impaired range; she correctly recognized 3 of 6 figures and made 0 false positive errors.

She scored in the average range on a measure of confrontation naming. Responsive naming was also intact. Verbal fluency when given letter cues was in the impaired range, while fluency when given a category cue was also impaired. Repetition of single words,

nonsense words, and sentences was intact. Auditory comprehension of yes/no questions and short passages was in the impaired range. Comprehension of syntactically complex sentences was also impaired. Comprehension of commands was also below expectation.

She was unable to complete a measure of basic visuospatial ability due to apparent difficulty understanding the task. Her spontaneous drawing of a clock was impaired; she was unable to place numbers on the clock face or set the hands to the correct requested time. Her copy of a complex figure was severely impaired due to missing and improperly placed figure elements. Her copy of an array of 6 figures to use in a visual memory test was also significantly impaired and notable for rotated elements, incorrect representations of the figures, and incorrect placement of figures.

She overall performed in the impaired range on measures of executive functioning. Performance on a measure of speeded visual scanning and sequencing was discontinued after 3 minutes, and therefore a more difficult version of this task that included a set-shifting component was not administered. Speeded color word reading and color naming were both in the impaired range; on a trial of this task where she had to inhibit an over-learned response, she scored in the impaired range.

A self-report measure of mood functioning was discontinued due to significant difficulty.

SUMMARY AND IMPRESSIONS

Ms. Gray is of estimated average premorbid intellectual ability. Results of the current neuropsychological evaluation were notable for impairments across most cognitive domains assessed including learning and memory, information processing speed, verbal fluency, language comprehension, basic attention, visuospatial ability, and executive functioning. Memory performance was characterized by reduced initial learning, rapid forgetting, and lack of benefit from recognition cues, indicating encoding difficulties. Significant word finding difficulties were observed in conversation, although performance on a measure of confrontation naming was average. Repetition and fund of knowledge were also relative strengths. Her daughter has recently reported concern about significant behavioral changes.

Overall, findings indicate cortical and subcortical brain dysfunction in multiple regions and are consistent with a diagnosis of dementia, or major neurocognitive disorder. Regarding etiology, these findings are concerning for a neurodegenerative condition, but they are not independently diagnostic and must be considered within the context of her full neurologic work-up. Some prominent features of her presentation, in addition to her age, may indicate a less common variant of Alzheimer's disease. Given significant visuospatial and comprehension difficulties, posterior cortical atrophy (PCA) may be a consideration. She also has features of another pathologically-related condition, advanced logopenic-variant primary progressive aphasia, although some aspects of her presentation are less consistent with this diagnosis. Based on these results and impressions, recommendations are made below.

RECOMMENDATIONS

1. She should follow up with her referring physician regarding these results, requests for additional work-up, and any treatment recommendations.

2. Given these findings, it is recommended that she not drive.

3. She should continue to receive assistance with complex daily activities.

4. She should utilize cognitive compensatory strategies such as:
- writing down important information she needs to remember in a notebook that she can refer to as needed
- keeping an updated calendar for upcoming appointments and events
- utilizing written reminders and alarms to remind her to perform certain actions (i.e. taking her medication)

- allowing herself extra time to complete tasks
- utilizing to-do lists where tasks are broken down into several steps that she can cross off as she completes each step
- avoiding multitasking, completing only one task at a time

5. She should remain physically, cognitively, and socially active to support optimal brain health. Research has shown that regular physical activity is especially important for slowing cognitive decline in individuals with dementia.

Thank you for allowing me to participate in Ms. Gray's care. Please do not hesitate to contact me if I can be of further assistance.

Melissa A Lancaster, PhD
Neuropsychologist
Northwestern Medicine Regional Medical Group- Neurosciences

Diagnoses: major neurocognitive disorder (F01.50)

Attestation: Melissa A Lancaster time reviewing relevant records, integrating neuropsychological test findings across tests with information from history, observation, questionnaire, and interview, and preparing written report: 2 hours (96132 = 1 unit; 96133 = 1 unit). Kelly McCoy, psychometrist, time spent administering and scoring neuropsychological tests to patient under the supervision of Dr. Lancaster: 2 hours, 43 minutes face-to-face; 1 hours 25 minutes scoring; 4 hours 8 minutes total (96138 = 1 unit (30 minutes); 96139 = 7 units (30 minutes)).

Testing Time:	9:23 am - 12:06 pm	**Patient Name:**	Carol Gray	**DOB:**	8/2/1962
Total Testing Time:	2 hrs & 43 mins	**Provider:**	Lancaster	**Age:**	59
Tech 1 Scoring Time:	47 mins (BL)	**DOE:**	5/19/2022	**Sex:**	F
Tech 2 Scoring Time:	38 mins (KM)	**Tech:**	KM	**Hand:**	R
Total Scoring Time:	1 hr & 25 mins			**Education:**	16

	Raw	SS/ss/T/z	%ile	
SCREENING				
WMS-III Information & Orientation	8			
INTELLIGENCE				Est. FSIQ
TOPF	31	90	25	109 (Y)
WAIS-IV				
Information	12	9	37	
Digit Span	D/C'ed			
ATTENTION				
WAIS-IV Digit Span				
Total	N/A			Longest Span
Forward	6	5	5	4
Backward	4	5	5	2
Sequencing	D/C'ed			
EXECUTIVE FUNCTIONS				
Trail Making Test				Errors
Trails A	D/C'ed			
Trails B	D/C'ed			

Stroop Color Word Test			
Word Reading	35	<20	0
Color Naming	16	<20	0
Color-Word	8	<20	0
Interference	-5	44-46	27-34
SDMT	D/C'ed		
LANGUAGE			
BDAE Comprehension	10	30	2
BDAE Commands	12		40
BDAE Syntactic Processing	6		30
BDAE Embedded Sentences	3		0-10
BDAE Repetition-single words	10		100
BDAE Repetition-nonsense words	5		100
BDAE Repetition-sentences	6		50-60
BDAE Responsive Naming	20		100
BNT	56	46	34
COWAT	16	24	0
Animal Naming	5	8	0
MOANS Category Fluency	11	2	<1
VISUOSPATIAL			
JoLo	D/C'ed		
RBANS			
Figure Copy	4	-10.14	0
Clock Drawing Test	Administered		
VERBAL MEMORY			
HVLT-R Form 4			
Trial 1	2	≤20	0
Trial 2	3	≤20	0
Trial 3	7	25	1
Total Recall	12	≤20	0
Delayed Recall	0	≤20	0
Percent Retention	0	≤20	0
Recognition Discrimination	5	≤20	0
WMS-IV LM			
Logical Memory I	8	2	0
Logical Memory II	3	2	0
Recognition	16		≤2
LM I Story A	2		
LM I Story B	6		
LM II Story A	0		
LM II Story B	3		
LM II Cue Given	Y/N		
LM II Story A Recognition	9		
LM II Story B Recognition	7		
VISUAL MEMORY			
BVMT-R Form 1			
Trial 1	3	38	12
Trial 2	2	21	0
Trial 3	2	<20	0
Total Recall	7	21	0
Learning	0	30	2
Delayed Recall	0	<20	0

% Retention	0	<1
Hits	3	1-2
FP	3	<1
Discrimination	0	<1
Copy	7	

SENSORY/MOTOR

Grooved Pegboard				Drops
Dominant	274	10	0	1
NonDominant	491	13	0	1

EMOTION/PERSONALITY

State-Trait Anxiety Inventory (STAI)	D/C'ed

PERFORMANCE

TOMM	
Trial 1	44
Trial 2	47
Retention	47

Patient Instructions

Melissa A. Lancaster, PhD at 5/19/2022 8:45 AM

Dear Ms. Gray,

We have completed your neuropsychological testing, and a full report of your results will be available in 2-3 weeks. We will not contact you about the results, but a copy of the report will be available for your referring provider. Please follow up with Dr. Grindstaff to discuss your future care.

Your report should also be available in MyChart after I have completed it; hover your mouse over “Visits” and click “Appointments and Visits.” Under Past Visits, each appointment should have links to click “View Notes” and “View After Visit Summary.” My report should be in the notes section. Send me a message in MyChart if you are unable to view it after 3 weeks.

If you would also like to make an appointment to review and discuss the results with me, or if you wish to request that a copy of the report be mailed to your home, please call 630-933-4056.

Thank you,
Melissa A Lancaster, PhD
Neuropsychologist
Northwestern Medicine Regional Medical Group- Neurosciences