

[¹⁸F]flubatine: a Novel Biomarker of Cholinergic $\alpha 4\beta 2$ Nicotinic Receptors and Cognition in
Parkinson's Disease (HUM83054; PI: Muller)

- # Enter information in workbook as complete as possible. Document all omissions.
- # Make sure each page has correct study code and examiner's initials.
- # Make sure to complete workbook/study materials checklist before subject leaves.
- # Document if subject is dual-enrolled with other studies.
- # Document any side effects or problems.
- # Document any deviation from protocol and reason for the deviation.

A WORKBOOK WAS MISLABELED AS CHONI PAT 01 -
ALL PAGES WERE CORRECTED TO CHONI NC 01

C.Millerovic 3-17-14

INFORMED CONSENT

Study ID: HUM00083054 IRB: IRBMED Date Approved: 2/20/2014 Expiration Date: 2/19/2015

HUM83054 Face-to-Face Script*Follow these procedures during the informed consent process:*

- Welcome the subject.
- Provide a quick synopsis of the study and related procedures. Study procedures to emphasize in particular:
 - Clinical, motor, and neuropsychological testing procedures
 - Imaging procedures
 - Risks involved and radiation safety
 - Confidentiality
 - Time commitment
 - Reimbursement
- Ask if subject already has read the informed consent form. If subject has not read informed consent provide ample time for subject to read consent form. Answer any remaining questions.
- Assess if subject has understood procedures. For example, let subject repeat in own words:
 - Main tasks to be completed
 - One or more potential risks of participation
 - Number of visits
- If there are no remaining questions, sign informed consent. Provide a copy of the informed consent to the subject.
- Explain that informed consent is a continuing process and that questions can be asked at any time. Emphasize that subject can drop out of study at any time.

→Please check expiration date of consent form before signing←

Informed consent was obtained prior to the start of research procedures with the following persons present:

1. participant
2. Christae Munderovic
3. Cyrus Sarosh

Average duration of time spent for explanation of study and answering questions was

- 15 minutes or less
- 16-30 minutes
- more than 30 minutes

I discussed the risks, benefits, and alternatives with the research participant and reviewed the consent form. I answered all questions to his/her satisfaction. The research subject agreed to participate in the research study and signed the consent form prior to beginning any research procedures.

Print name & Signature:

Christae MunderovicTime: 8:30 3-17-14 am/pm

DEMOGRAPHIC/CLINICAL INFORMATION

- Gender: male / female
- Current age: 77 yrs.
- Hand dominance: Right / Left / Ambidextrous → Use of non-dominant hand: Yes / No
- Native language: English

Ethnicity

- Hispanic or Latino
 Not Hispanic or Latino
 Unknown (individuals not reporting)

Race

- American Indian/Alaska Native
 Asian
 Native Hawaiian or Other Pacific Islander
 Black or African American
 White
 More Than One Race
 Unknown or Not Reported

- Circle the highest year of school completed:

3 Masters degree

Primary School						High School						College/University					Graduate School				Post-Grad	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23+

- Occupation: Engineer
- Veteran: yes /
- Height 5' 11" Weight 176
- BP sit 130 / 78 BP stand 118 / 82 Pulse sit 64 Pulse stand 68
- Hearing RT 4" Hearing LT 2" Vision RT 20/25 Vision LT 20/30
- Color Blind: yes / no
- Do you wear glasses/contacts? Yes / No → If yes: distance / reading / both
- Other visual impairment? Yes / No → If yes, describe: _____
- Drug allergies? Yes / No → If yes, please list below:

- Adopted: yes /

→ If no, is there anybody in your family with Parkinson, Alzheimer, shaking, balance problems, dementia, severe depression, bipolar disorder, schizophrenia or severe nervous breakdowns? Yes / No

→ If yes, please specify the relative (father, mother, child, aunt, uncle), the nature of the disease, and the age of onset:

J

List all prescribed and OTC medications: Please obtain details regarding dopaminergic Rx

NAME	DOSE	HOW LONG
Saw Palmetto		
Vit C		
Multi Vit		

- History of tobacco use? Yes No → How long? _____ yrs
- History of substance abuse? Yes / No → Which Substance? /How long?
- Prosthetic surgeries? Yes / No
→ If yes, which joints: _____ RIGHT / LEFT
_____ RIGHT / LEFT
- Surgical History:
Tonsillectomy
2 facelifts

HISTORY OF...	YES	NO
Cancer?	<i>skin</i>	X
Diabetes?		X
Asthma, chronic bronchitis, COPD, breathing problems?		
Stroke?		X
Mini stroke or TIA?		
Head injury with loss of consciousness/coma?		
History of bleeding disorder/excessive bleeding?		
Encephalitis or meningitis?		
Seizure or epilepsy?		
Liver or kidney problems?		
Brain surgery?		
Lupus?		
Depression?		
Anxiety?		
High blood pressure/hypertension?		
Heart attack, heart problems		
Headaches/migraines		✓

- Is there anything else that you would like to inform us about your health or well-being? Yes / *No*

If yes, please specify:

- Are you currently enrolled in another research study? Yes / *No*

→ If yes, when? _____ Type _____ Receiving Rx? Yes / No

- Exposure to radiation from medical tests or research over the last two years? Yes / *No*

→ If yes, please indicate: _____

MRI SCREENING QUESTIONS

YES	NO	
	<input checked="" type="checkbox"/>	Past or present job/hobby involving metal work
	<input type="checkbox"/>	Metal fragment in eye (s)
	<input type="checkbox"/>	Bullet, BB, or shrapnel in body
	<input type="checkbox"/>	Cardiac, Brain, or any other type of pacemaker (EXCLUDE FROM STUDY)
	<input type="checkbox"/>	Replacement heart valve
	<input type="checkbox"/>	Surgical clips or wires (where in body)
	<input type="checkbox"/>	Artificial body parts
	<input type="checkbox"/>	Ear implants, hearing aids
	<input type="checkbox"/>	Stents/ vascular repair of any kind (ASK WHAT TYPE/ASK FOR CARWITH INFO)
	<input checked="" type="checkbox"/>	Cochlear, or other body implants
	<input checked="" type="checkbox"/>	Body piercing or tattoos
<input checked="" type="checkbox"/>		Claustrophobia? Will an RX be needed?
<input checked="" type="checkbox"/>		Can you lie still in a small space for ~ 45 minutes
<input checked="" type="checkbox"/>		Can you lie flat and still on a table for 1-2 hours

PD SYMPTOMS

WHAT was the first symptom: _____ or NA

- WHEN was the first symptom: YR: _____ AGE _____ DURATION of DZ _____ yr(s)

- Do you have BALANCE or GAIT problems Yes / No → onset _____ (mo/yr)

→ FALLING? Yes / No → Have you fallen in your home Yes / No

→ IF you are falling, unrelated to "freezing", how often?

1. Rare
2. Occasional (< 1 per day)
3. Fall ≈ once per day
4. Fall > 1 per day

****ASK EVERYONE**** → Do you have a DOG ? Yes / No

- Do you have TREMOR or SHAKING? Yes / No → onset _____ (mo/yr)

→ IF yes, your Right or Left arms and/or legs shake:

- (a) Equally
- (b) Left more than right or left only
- (c) Right more than left or right only

→ Are you bothered more by the balance/gait problem or tremor/shaking problem?

- (a) Shaking
- (b) Balance/gait
- (c) Equally bothersome

- Do medications help the tremor or motor symptoms? Yes / No

NA

- Are you experiencing any serious MEMORY or CONCENTRATION problems? Yes / No

→ ONSET _____ (mo/yr)

Yes / No

→ ONSET _____ (mo/yr)

- Do you "ACT OUT" your dreams? (shouting, flailing arm, kicking legs)

Yes / No

→ ONSET _____ (mo/yr)

- Do you feel faint or lightheaded when you get up/stand up? Yes / No
- Have you passed out over the last few years? Yes / No
- Do you speak more softly...change in quality of voice? Yes / No
- Do you live with another person? Yes / No If yes, who spouse
- Do you need assistance with dressing, bathing, or feeding? Yes / No
- Are you having visual hallucinations Yes / No ONSET _____
- Are you having auditory hallucinations Yes / No ONSET _____
- Are you experiencing any of the following symptoms? Check box

Constipation	Loss of hearing	Severe joint pain (list below)
Urinary / Bladder Problems	Difficulty Swallowing	
Males: symptoms of ED	Irregular Heart Beat	
Double vision	Blue/dusky hands	

INCLUSION/EXCLUSION CRITERIA PD OR NC**INCLUSION FOR PARKINSON DISEASE SUBJECTS**

YES / NO	Age 50 and above, Male or Female
YES / NO	PD diagnosis established according to the UK Parkinson's Disease Society Brain Bank Research Center (UKPDSBRC) clinical diagnostic criteria for PD. H&Y 1-4
YES / NO	Non-smoking
YES / NO	Absence of dementia confirmed by clinical and detailed neuropsychological assessment

INCLUSION FOR NORMAL CONTROL SUBJECTS

YES / NO	Age 50 and above, Male or Female
YES / NO	Non-smoking
YES / NO	Absence of dementia confirmed by clinical and detailed neuropsychological assessment

EXCLUSION FOR ALL SUBJECTS

YES / NO	Subjects with contra-indications to magnetic resonance imaging (MRI), including, but not limited to, those with pacemakers, or claustrophobia
YES / NO	Evidence of large vessel stroke or mass lesion on MRI
YES / NO	Subjects using cholinergic (donepezil/Aricept, etc.), anticholinergic (Trihexyphenidyl/Artane, Benztropine/Cogentin), or neuroleptic drugs.
YES / NO	Evidence of atypical parkinsonism on neurological exam
YES / NO	Subjects limited by participation in research procedures involving ionizing radiation
YES / NO	Pregnant (absence to be confirmed within 48 hours prior to each PET session) or breastfeeding
YES/NO	Active smoking, use of other tobacco products or nicotinic drugs such as nicotine patches or varenicline

MOTOR TESTING

0:08:42

0:07:68

- Time getting up from chair/walk 3 m, turn and sit back down in chair: _____ sec
- Time walking in hallway from exam room to waiting area: _____ sec
- Vibration (tuning fork) at ankle: RT 2 LT 2
- Cold gradient legs: RT: Y/N LT: Y/N
- Jerk Reflexes:

(0= absent, 1=mild, 2= normal, 3=brisk) Ankle Knee
RT 0.5 LT 1 RT 2 LT 2

- Coordination: Normal / Abnormal

Hammer toes

- Motor strength: Normal / Abnormal

Modified Hoehn & Yahr

- [0] No signs of disease
- [1] Unilateral disease
- [1.5] Unilateral and axial involvement
- [2] Bilateral disease, without impairment of balance
- [2.5] Mild bilateral disease, with recovery on pull test without rater assistance (takes few steps backward but does not fall)
- [3] Mild to moderate bilateral disease; will fall on pull test if not caught; physically independent
- [4] Severe disability; still able to walk or stand unassisted
- [5] Wheelchair bound or bedridden unless aided

MDS-revised UPDRS Part III: Motor Examination

- Is the patient **TAKING PD medications?** Yes / No
- Is the patient currently in an **OFF state?** Yes / No

Current time: ____ : ____ am / pm

Last medication time: ____ : ____ am / pm yesterday / today (or other)

*NA***3.1 Speech:**

Instructions to examiner: Listen to the patient's free-flowing speech and engage in conversation if necessary. Suggested topics: ask about the patient's work, hobbies, exercise, or how he got to the doctor's office. Evaluate volume, modulation (prosody) and clarity, including slurring, palilalia (repetition of syllables) and tachyphemia (rapid speech, running syllables together).

0: Normal: No speech problems.**1: Slight:** Loss of modulation, diction or volume, but still all words easy to understand.**2: Mild:** Loss of modulation, diction or volume, with a few words unclear, but the overall sentences easy to follow.**3: Moderate:** Speech is difficult to understand to the point that some, but not most, sentences are poorly understood.**4: Severe:** Most speech is difficult to understand or unintelligible.**3.2 Facial Expression:**

Instructions to examiner: Observe the patient sitting at rest for 10 seconds, without talking and also while talking. Observe eye-blink frequency, masked facies or loss of facial expression, spontaneous smiling and parting of lips.

0: Normal: Normal facial expression.**1: Slight:** Minimal masked facies manifested only by decreased frequency of blinking.**2: Mild:** In addition to decreased eye-blink frequency, Masked facies present in the lower face as well, namely fewer movements around the mouth, such as less spontaneous smiling, but lips not parted.**3: Moderate:** Masked facies with lips parted some of the time when the mouth is at rest.**4: Severe:** Masked facies with lips parted most of the time when the mouth is at rest.**3.3 Rigidity:**

Instructions to examiner: Rigidity is judged on slow passive movement of major joints with the patient in a relaxed position and the examiner manipulating the limbs and neck. First, test without an activation maneuver. Test and rate neck and each limb separately. For arms, test the wrist and elbow joints simultaneously. For legs, test the hip and knee joints simultaneously. If no rigidity is detected, use an activation maneuver such as tapping fingers, fist opening/closing, or heel tapping in a limb not being tested. Explain to the patient to go as limp as possible as you test for rigidity.

Neck: RUE: LUE: RLE: LLE: **0: Normal:** No rigidity**1: Slight:** Rigidity only detected with activation maneuver.**2: Mild:** Rigidity detected without the activation maneuver, but full range of motion is easily achieved.**3: Moderate:** Rigidity detected without the activation maneuver; full range of motion is achieved with effort.**4: Severe:** Rigidity detected without the activation maneuver and full range of motion not achieved**3.4 Finger Tapping:**

Instructions to examiner: Each hand is tested separately. Demonstrate the task, but do not continue to perform the task while the patient is being tested. Instruct the patient to tap the index finger on the thumb 10 times as quickly AND as big as possible. Rate each side separately, evaluating speed, amplitude, hesitations, halts and decrementing amplitude.

R: L: **0: Normal:** No problems**1: Slight:** Any of the following: a) the regular rhythm is broken with one or two interruptions or hesitations of the tapping movement; b) slight slowing; c) the amplitude decrements near the end of the 10 taps.**2: Mild:** Any of the following: a) 3 to 5 interruptions during tapping; b) mild slowing; c) the amplitude decrements midway in the 10-tap sequence.**3: Moderate:** Any of the following: a) more than 5 interruptions during tapping or at least one longer arrest (freeze) in ongoing movement; b) moderate slowing; c) the amplitude decrements starting after the 1st tap.**4: Severe:** Cannot or can only barely perform the task because of slowing, interruptions or decrements

3.5 Hand Movements:

Instructions to examiner: Test each hand separately.

Demonstrate the task, but do not continue to perform the task while the patient is being tested. Instruct the patient to make a tight fist with the arm bent at the elbow so that the palm faces the examiner. Have the patient open the hand 10 times as fully AND as quickly as possible. If the patient fails to make a tight fist or to open the hand fully, remind him/her to do so. Rate each side separately, evaluating speed, amplitude, hesitations, halts and decrementing amplitude.

R:  L: 

0: Normal: No problem.

1: Slight: Any of the following: a) the regular rhythm is broken with one or two interruptions or hesitations of the movement; b) slight slowing; c) the amplitude decrements near the end of the task.

2: Mild: Any of the following: a) 3 to 5 interruptions during the movements; b) mild slowing; c) the amplitude decrements midway in the task.

3: Moderate: Any of the following: a) more than 5 interruptions during the movement or at least one longer arrest (freeze) in ongoing movement; b) moderate slowing; c) the amplitude decrements starting after the 1st open-and-close sequence.

4: Severe: Cannot or can only barely perform the task because of slowing, interruptions or decrements.

3.6 Pronation-Supination Movements of Hands:

Instructions to examiner: Test each hand separately.

Demonstrate the task, but do not continue to perform the task while the patient is being tested. Instruct the patient to extend the arm out in front of his/her body with the palms down; then to turn the palm up and down alternately 10 times as fast and as fully as possible. Rate each side separately, evaluating speed, amplitude, hesitations, halts and decrementing amplitude.

R:  L: 

0: Normal: No problems

1: Slight: Any of the following: a) the regular rhythm is broken with one or two interruptions or hesitations of the movement; b) slight slowing; c) the amplitude decrements near the end of the sequence.

2: Mild: Any of the following: a) 3 to 5 interruptions during the movements; b) mild slowing; c) the amplitude decrements midway in the sequence.

3: Moderate: Any of the following: a) more than 5 interruptions during the movement or at least one longer arrest (freeze) in ongoing movement; b) moderate slowing; c) the amplitude decrements starting after the 1st supination-pronation sequence.

4: Severe: Cannot or can only barely perform the task because of slowing, interruptions or decrements.

3.7 Toe tapping:

Instructions to examiner: Have the patient sit in a straight-backed chair with arms, both feet on the floor. Test each foot separately. Demonstrate the task, but do not continue to perform the task while the patient is being tested. Instruct the patient to place the heel on the ground in a comfortable position and then tap the toes 10 times as big and as fast as possible. Rate each side separately, evaluating speed, amplitude, hesitations, halts and decrementing amplitude.

R:  L: 

0: Normal: No problem.

1: Slight: Any of the following: a) the regular rhythm is broken with one or two interruptions or hesitations of the tapping movement; b) slight slowing; c) amplitude decrements near the end of the ten taps.

2: Mild: Any of the following: a) 3 to 5 interruptions during the tapping movements; b) mild slowing; c) amplitude decrements midway in the task.

3: Moderate: Any of the following: a) more than 5 interruptions during the tapping movements or at least one longer arrest (freeze) in ongoing movement; b) moderate slowing; c) amplitude decrements after the first tap.

4: Severe: Cannot or can only barely perform the task because of slowing, interruptions or decrements

3.8 Leg Agility:

Instructions to examiner: Have the patient sit in a straight-backed chair with arms. The patient should have both feet comfortably on the floor. Test each leg separately. Demonstrate the task, but do not continue to perform the task while the patient is being tested. Instruct the patient to place the foot on the ground in a comfortable position and then raise and stomp the foot on the ground 10 times as high and as fast as possible. Rate each side separately, evaluating speed, amplitude, hesitations, halts and decrementing amplitude.

R:  L: 

0: Normal: No problem.

1: Slight: Any of the following: a) the regular rhythm is broken with one or two interruptions or hesitations of the movement; b) slight slowing; c) amplitude decrements near the end of the task.

2: Mild: Any of the following: a) 3 to 5 interruptions during the movements; b) mild slowness; c) amplitude decrements midway in the task.

3: Moderate: Any of the following: a) more than 5 interruptions during the movement or at least one longer arrest (freeze) in ongoing movement; b) moderate slowing in speed; c) amplitude decrements after the first tap.

4: Severe: Cannot or can only barely perform the task because of slowing, interruptions or decrements.

3.9 Arising From Chair:

Instructions to examiner: Have the patient sit in a straight-backed chair with arms, with both feet on the floor and sitting back in the chair (if the patient is not too short). Ask the patient to cross his/her arms across the chest and then to stand up. If the patient is not successful, repeat this attempt a maximum up to two more times. If still unsuccessful, allow the patient to move forward in the chair to arise with arms folded across the chest. Allow only one attempt in this situation. If unsuccessful, allow the patient to push off using his/her hands on the arms of the chair. Allow a maximum of three trials of pushing off. If still not successful, assist the patient to arise. After the patient stands up, observe the posture for item

0: Normal: No problems. Able to arise quickly without hesitation.

1: Slight: Arising is slower than normal; or may need more than one attempt; or may need to move forward in the chair to arise. No need to use the arms of the chair.

2: Mild: Pushes self up from arms of chair without difficulty.

3: Moderate: Needs to push off, but tends to fall back; or may have to try more than one time using arms of chair, but can get up without help.

4: Severe: Unable to arise without help.

3.11 Freezing of Gait

Instructions to examiner: While assessing gait, also assess for the presence of any gait freezing episodes. Observe for start hesitation and stuttering movements especially when turning and reaching the end of the task. To the extent that safety permits, patients may NOT use sensory tricks during the assessment.

0: Normal: No freezing

1: Slight: Freezes on starting, turning or walking through doorway with a single halt during any of these events, but then continues without freezing during straight walking.

2: Mild: Freezes on starting, turning or walking through doorway with more than one halt during any of these events, but then continues without freezing during straight walking.

3: Moderate: Freezes once during straight walking.

4: Severe: Freezes multiple times during straight walking.

3.10 Gait:

Instructions to examiner: Testing gait is best performed by having the patient walking away from and towards the examiner so that both right and left sides of the body can be easily observed simultaneously. The patient should walk at least 10 meters (30 feet), then turn around and return to the examiner. This item measures multiple behaviors: stride amplitude, stride speed, height of foot lift, heel strike during walking, turning, and arm swing, but not freezing. Assess also for "freezing of gait" (next item 3.11) while patient is walking. Observe posture for item 3.13

0: Normal: No problems.

1: Slight: Independent walking with minor gait impairment.

2: Mild: Independent walking but with substantial gait impairment.

3: Moderate: Requires an assistance device for safe walking (walking stick, walker) but not a person.

4: Severe: Cannot walk at all or only with another person's assistance.

3.12 Postural Stability:

Instructions to examiner: Test retropulsion. Stand behind the patient and instruct the patient on what is about to happen. Explain that s/he is allowed to take a step backwards to avoid falling. Observe the number of retropulsive steps. The first pull is an instructional demonstration and is purposely milder and not rated. The second time the shoulders are pulled briskly and forcefully towards the examiner with enough force to displace the center of gravity so that patient MUST take a step backwards. The examiner needs to be ready to catch the patient, but must stand sufficiently back so as to allow enough room for the patient to take several steps to recover independently. Do not allow the patient to flex the body abnormally forward in anticipation of the pull. Observe for the number of steps backwards or falling. Up to and including two steps for recovery is considered normal, so abnormal ratings begin with three steps. If the patient fails to understand the test, the examiner can repeat the test.

0: Normal: No problems: 1 - 2 steps

1: Slight: 3-5 steps, but subject recovers unaided.

2: Mild: > 5 steps, but subject recovers unaided.

3: Moderate: Stands safely, but with absence of postural response; falls if not caught by examiner.

4: Severe: Very unstable, tends to lose balance spontaneously or with just a gentle pull on the shoulders.

3.13 Posture

Instructions to examiner: Posture is assessed with the patient standing erect after arising from a chair, during walking, and while being tested for postural reflexes. If you notice poor posture, tell the patient to stand up straight and see if the posture improves (see option 2 below). Rate the worst posture seen in these three observation points. Observe for flexion and side-to-side leaning.

0: Normal: No problems.

1: Slight: Not quite erect, but posture could be normal for older person.

2: Mild: Definite flexion, scoliosis or leaning to one side, but patient can correct posture to normal posture when asked to do so.

3: Moderate: Stooped posture, scoliosis or leaning to one side that cannot be corrected volitionally to a normal posture.

4: Severe: Flexion, scoliosis or leaning with extreme abnormality of posture.

3.14 Global Spontaneity or Movement (Body Bradykinesia):

Instructions to examiner: This global rating combines all observations on slowness, hesitancy, and small amplitude and poverty of movement in general, including a reduction of gesturing and of crossing the legs. This assessment is based on the examiner's global impression after observing for spontaneous gestures while sitting, and the nature of arising and walking.

0: Normal: No problems

1: Slight: Slight global slowness and poverty of spontaneous movements.

2: Mild: Mild global slowness and poverty of spontaneous movements.

3: Moderate: Moderate global slowness and poverty of spontaneous movements.

4: Severe: Severe global slowness and poverty of spontaneous movements.

3.15 Postural Tremor of the Hands

Instructions to examiner: All tremor, including re-emergent rest tremor, that is present in this posture is to be included in this rating. Rate each hand separately. Rate the highest amplitude seen. Instruct the patient to stretch the arms out in front of the body with palms down. The wrist should be straight and the fingers comfortably separated so that they do not touch each other. Observe this posture for 10 seconds.

R:  L: 

0: Normal: No tremor

1: Slight: Tremor is present but less than 1 cm in amplitude.

2: Mild: Tremor at least 1 but less than 3 cm in amplitude.

3: Moderate: Tremor is at least 3 but less than 10 cm in amplitude.

4: Severe: Tremor is at least 10 cm in amplitude.

3.16 Kinetic Tremor of the Hands

Instructions to examiner: This is tested by the finger-to-nose maneuver. With the arm starting from the outstretched position, have the patient perform at least three finger-to-nose maneuvers with each hand reaching as far as possible to touch the examiner's finger. The finger-to-nose maneuver should be performed slowly enough not to hide any tremor that could occur with very fast arm movements. Repeat with the other hand, rating each hand separately. The tremor can be present throughout the movement or as the tremor reaches either target (nose or finger). Rate the highest amplitude seen.

R:  L: 

0: Normal: No tremor

1: Slight: Tremor is present but less than 1 cm in amplitude.

2: Mild: Tremor at least 1 but less than 3 cm in amplitude.

3: Moderate: Tremor is at least 3 but less than 10 cm in amplitude.

4: Severe: Tremor is at least 10 cm in amplitude.

3.17. Rest Tremor Amplitude

Instructions to examiner: This and the next item have been placed purposefully at the end of the examination to allow the rater to gather observations on rest tremor that may appear at any time during the exam, including when quietly sitting, during walking and during activities when some body parts are moving but others are at rest. Score the maximum amplitude that is seen at any time as the final score. Rate only the amplitude and not the persistence or the intermittency of the tremor. As part of this rating, the patient should sit quietly in a chair with the hands placed on the arms of the chair (not in the lap) and the feet comfortably supported on the floor for 10 seconds with no other directives. Rest tremor is assessed separately for all four limbs and also for the lip/jaw. Rate only the maximum amplitude that is seen at any time as the final rating.

RUE: LUE: RLE: LLE: Lip/Jaw:

Extremity ratings:

0: Normal: No tremor

1: Slight: < 1 cm in max amplitude

2: Mild: > 1 cm but < 3 cm in max amplitude.

3: Moderate: 3 – 10 cm in max amplitude

4: Severe: > 10 cm max amplitude

Lip/Jaw

0: Normal: No tremor

1: Slight: < 1 cm in max amplitude

Mild: > 1 cm but < 2 cm in max amplitude.

3: Moderate: > 2 cm but < 3 cm in max amplitude

4: Severe: > 3 cm max amplitude

Dyskinesia Impact on Part III ratings

A. Were dyskinesias (chorea or dystonia) present during the examination? No Yes

B. If yes, did these movements interfere with your ratings?

No Yes

X. Arm swing decrease; RUE: LUE:

0=normal 1=mild 2=moderate 3=severe 4=absent

3.18 Constancy of Rest Tremor

Instructions to examiner: This item receives one rating for all rest tremor and focuses on the constancy of rest tremor during the examination period when different body parts are variously at rest. It is rated purposefully at the end of the examination so that several minutes of information can be coalesced into the rating.

0: Normal: No tremor

1: Slight: Tremor at rest is present < 25% of the exam.

2: Mild: 26-50% of the exam

3: Moderate: 51-75% of the exam.

4: Severe: >75% of the exam

XXX. Most affected body side? R L symm

n/a

Mini-BESTest**ANTICIPATORY**SUB SCORE: 4 / 6**1. SIT TO STAND**

Instruction: "Cross your arms across your chest. Try not to use your hands unless you must. Do not let your legs lean against the back of the chair when you stand. Please stand up now."

- (2) Normal: Comes to stand without use of hands and stabilizes independently.
 (1) Moderate: Comes to stand WITH use of hands on first attempt.
 (0) Severe: Unable to stand up from chair without assistance, OR needs several attempts with use of hands.

2. RISE TO TOES

Instruction: "Place your feet shoulder width apart. Place your hands on your hips. Try to rise as high as you can onto your toes. I will count out loud to 3 seconds. Try to hold this pose for at least 3 seconds. Look straight ahead. Rise now."

- (2) Normal: Stable for 3 s with maximum height.
 (1) Moderate: Heels up, but not full range (smaller than when holding hands), OR noticeable instability for 3 s.
 (0) Severe: < 3 s.

3. STAND ON ONE LEG

Instruction: "Look straight ahead. Keep your hands on your hips. Lift your leg off of the ground behind you without touching or resting your raised leg upon your other standing leg. Stay standing on one leg as long as you can. Look straight ahead. Lift now."

Left: Time in Seconds Trial 1: 20 Trial 2: _____Right: Time in Seconds Trial 1: 23 Trial 2: 20

- (2) Normal: 20 s.
 (1) Moderate: < 20 s.
 (0) Severe: Unable.

- W* (2) Normal: 20 s.
W (1) Moderate: < 20 s. *W* (0) Severe: Unable *W* answer is 2

To score each side separately use the trial with the longest time.

To calculate the sub-score and total score use the side [left or right] with the lowest numerical score [i.e. the worse side].

REACTIVE POSTURAL CONTROLSUB SCORE: 6 / 6**4. COMPENSATORY STEPPING CORRECTION - FORWARD**

Instruction: "Stand with your feet shoulder width apart, arms at your sides. Lean forward against my hands beyond your forward limits. When I let go, do whatever is necessary, including taking a step, to avoid a fall."

- (2) Normal: Recovers independently with a single, large step (second realignment step is allowed).
 (1) Moderate: More than one step used to recover equilibrium.
 (0) Severe: No step, OR would fall if not caught, OR falls spontaneously.

5. COMPENSATORY STEPPING CORRECTION - BACKWARD

Instruction: "Stand with your feet shoulder width apart, arms at your sides. Lean backward against my hands beyond your backward limits. When I let go, do whatever is necessary, including taking a step, to avoid a fall."

- (2) Normal: Recovers independently with a single, large step.
 (1) Moderate: More than one step used to recover equilibrium.
 (0) Severe: No step, OR would fall if not caught, OR falls spontaneously.

6. COMPENSATORY STEPPING CORRECTION - LATERAL

Instruction: "Stand with your feet together, arms down at your sides. Lean into my hand beyond your sideways limit. When I let go, do whatever is necessary, including taking a step, to avoid a fall."

Left

Right

- (2) Normal: Recovers independently with 1 step (crossover or lateral OK).
 (1) Moderate: Several steps to recover equilibrium.
 (0) Severe: Falls, or cannot step.

- (2) Normal: Recovers independently with 1 step (crossover or lateral OK).
 (1) Moderate: Several steps to recover equilibrium.
 (0) Severe: Falls, or cannot step.

Use the side with the lowest score to calculate sub-score and total score.

SENSORY ORIENTATION

SUB SCORE: 6 / 6

7. STANCE (FEET TOGETHER); EYES OPEN, FIRM SURFACE

Instruction: "Place your hands on your hips. Place your feet together until almost touching. Look straight ahead. Be as stable and still as possible, until I say stop."

Time in seconds: _____

- (2) Normal: 30 s.
(1) Moderate: < 30 s.
(0) Severe: Unable.

8. STANCE (FEET TOGETHER); EYES CLOSED, FOAM SURFACE

Instruction: "Step onto the foam. Place your hands on your hips. Place your feet together until almost touching. Be as stable and still as possible, until I say stop. I will start timing when you close your eyes."

Time in seconds: _____

- (2) Normal: 30 s.
(1) Moderate: < 30 s.
(0) Severe: Unable.

9. INCLINE- EYES CLOSED

Instruction: "Step onto the incline ramp. Please stand on the incline ramp with your toes toward the top. Place your feet shoulder width apart and have your arms down at your sides. I will start timing when you close your eyes."

Time in seconds: _____

- (2) Normal: Stands independently 30 s and aligns with gravity.
(1) Moderate: Stands independently <30 s OR aligns with surface.
(0) Severe: Unable.

DYNAMIC GAIT

SUB SCORE: 9 / 10

10. CHANGE IN GAIT SPEED

Instruction: "Begin walking at your normal speed, when I tell you 'fast', walk as fast as you can. When I say 'slow', walk very slowly."

- (2) Normal: Significantly changes walking speed without imbalance.
(1) Moderate: Unable to change walking speed or signs of imbalance.
(0) Severe: Unable to achieve significant change in walking speed AND signs of imbalance.

11. WALK WITH HEAD TURNS – HORIZONTAL

Instruction: "Begin walking at your normal speed, when I say "right", turn your head and look to the right. When I say "left" turn your head and look to the left. Try to keep yourself walking in a straight line."

- (2) Normal: performs head turns with no change in gait speed and good balance.
(1) Moderate: performs head turns with reduction in gait speed.
(0) Severe: performs head turns with imbalance.

12. WALK WITH PIVOT TURNS

Instruction: "Begin walking at your normal speed. When I tell you to 'turn and stop', turn as quickly as you can, face the opposite direction, and stop. After the turn, your feet should be close together."

- (2) Normal: Turns with feet close FAST (< 3 steps) with good balance.
(1) Moderate: Turns with feet close SLOW (>4 steps) with good balance.
(0) Severe: Cannot turn with feet close at any speed without imbalance.

13. STEP OVER OBSTACLES

Instruction: "Begin walking at your normal speed. When you get to the box, step over it, not around it and keep walking."

- (2) Normal: Able to step over box with minimal change of gait speed and with good balance.
(1) Moderate: Steps over box but touches box OR displays cautious behavior by slowing gait.
(0) Severe: Unable to step over box OR steps around box.

14. TIMED UP & GO WITH DUAL TASK [3 METER WALK]

Instruction TUG: "When I say 'Go', stand up from chair, walk at your normal speed across the tape on the floor, turn around, and come back to sit in the chair."

Instruction TUG with Dual Task: "Count backwards by threes starting at _____. When I say 'Go', stand up from chair, walk at your normal speed across the tape on the floor, turn around, and come back to sit in the chair. Continue counting backwards the entire time."

TUG: 10.0 seconds; Dual Task TUG: 12.0 seconds

Preferred turning direction: Right / Left

(2) Normal: No noticeable change in sitting, standing or walking while backward counting when compared to TUG without Dual Task.

(1) Moderate: Dual Task affects either counting OR walking (>10%) when compared to the TUG without Dual Task.

(0) Severe: Stops counting while walking OR stops walking while counting.

When scoring item 14, if subject's gait speed slows more than 10% between the TUG without and with a Dual Task the score should be decreased by a point.

TOTAL SCORE: 25 / 28

MOTOR TEST BATTERY

83

Peg OFF	RT HAND	LT HAND
2 ROWS	34.9	34.8
5 ROWS	72.3	92.9

FINGER TAPPER "OFF"	RIGHT HAND	LEFT HAND
1	53	40
2	48	41
3	48	39
4	45	37
5	44	36
6	43	
7		
8		
9		
10		
MEAN	45.6	38.6

FOOTAPPING

<input checked="" type="checkbox"/> Right Foot—2 trials
<input checked="" type="checkbox"/> Left Foot—2 trials
<input checked="" type="checkbox"/> Alternate foot tapping
<input checked="" type="checkbox"/> Alternate Foot tapping with Cog task
<input checked="" type="checkbox"/> Parallel Foot Tapping

Start number: 60Trials: 57, 54, 51, 48, 45 (5)Errors: 0

<input checked="" type="checkbox"/> Sensory Organization Test
<input checked="" type="checkbox"/> Motor Control Test
<input checked="" type="checkbox"/> Oculovestibular Testing
<input checked="" type="checkbox"/> Motor Reaction Test
<input checked="" type="checkbox"/> APDM Sensor Assessment:

ITug	ISaw	Firm-EO	Firm-EC	Pad-EO	Pad-EC	Ramp-EO	Ramp-EC
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mini-BESTest Sensor test							
<input checked="" type="checkbox"/> GaitRite Assessment							
<input checked="" type="checkbox"/> Protokinetics (Zeno) Walkway Assessment							

CW Turn	CCW Turn	NP Stop	FP Stop	CW Turn & Stop	CCW Turn & Stop	CW Spot Turn	CCW Spot Turn	OBST
<input checked="" type="checkbox"/>								

OLFACTION ASSESSMENT

- Hx allergies/sinusitis
 Stuffy nose today
 Current Smoker
 Hx Smoking
 UPSIT score: 30 / 40 = 35 %

- Acoustic Rhinometer :

Side	Right	Left
Trial 1 Volume	4.35	6.62
Trial 2 Volume	5.27	6.69
Trial 3 Volume	3.99	6.43
Average Volume	4.53	6.58

DNA

- DNA consent obtained: yes / no
 saliva obtained: yes / no / NA
 blood obtained: yes / no / NA

obtained during previous

COGNITIVE FLUCTUATIONS EVALUATION

Checklist item:

I. "Fluctuations in Arousal" (not due to medical illness or known drug effect):

Rate the degree of variability, not the degree of confusion or disorientation.

- (0) Not present.
1. Slight or occasional daily fluctuations in attention or orientation to time. May include mild confusion that only occurs at night.
 2. Noticeable, consistent daily fluctuations in attention, orientation to time, or periods of confusion. May occur during the day or night.
 3. Marked daily fluctuations in attention, orientation to time, or periods of confusion. Can occur at any time and may include decreased levels of alertness or awareness.
 4. Dramatic daily fluctuations in attention, orientation to time, or periods of confusion. Definite periods of reduced alertness, awareness, or responsiveness to the environment.

FLUCTUATING COGNITIONS ("Confusional episodes") SCALE (Neurology 2000; 54; 1623):

II. Does the patient ever have spontaneous impaired alertness and concentration, i.e., appears drowsy but awake, looks dazed, is not aware of what is going on? (Clear examples demonstrating impaired consciousness with variations in performance/cognition are required to receive a positive rating). Have these episodes occurred within the last month:

0=No

1=Yes

9=Not known

III. Has the level of confusion experienced by the patient tended to vary recently from day to day or week to week? F.E., becoming worse, then perhaps improving for a while (i.e., up and down)? (Significant fluctuation is regarded as present if distinct examples of differences in performance/cognition can be given on at least two occasions over the last month).:

0=No

1=Yes

9=Not known

IV. If present:

Rate FREQUENCY of Fluctuation Cognitions	Rate DURATIONS of Fluctuation Cognitions
1 = Less than 1 per month 2= Monthly-Weekly 3= Weekly-Daily 4= ≥ Daily	0= seconds 1= Less than 5 minutes 2= 5 minutes-1 hour 3 = ≥ 1 hour 4= ≥ 1 day

V. "Visual hallucinations" (sees people, animals, or objects that do not actually exist)

(not due to medical illness or known drug effect):

- (0) Not present.

1. May have vivid dreams or misinterpret what is seen, but no definite visual hallucinations.
2. Definite but "benign" visual hallucinations.
3. Occasional to frequent visual hallucinations; believes to be real but does not act on them.
4. Persistent, well-formed visual hallucinations; believes to be real and may act on them.

**FLUCTUATIONS NOTICED TODAY WHILE ADMINISTERING TESTS? YES NO

PDQ-39 QUESTIONNAIRE

How often DURING THE PAST MONTH have you...

1. Had difficulty doing the leisure activities which you would like to do?			
2. Had difficulty looking after your home e.g. DIY, cooking, housework?			
3. Had difficulty carrying bags or shopping?			
4. Had problems walking half a mile?			
5. Had problems walking 100 yards?			
6. Had problems getting around the house as easily as you would like?			
7. Had difficulty getting around in public?			
8. Needed someone else to accompany you when you went out?			
9. Felt frightened or worried about falling over in public?			
10. Been confined to the house more than you would like?			
11. Had difficulty washing yourself?			
12. Had difficulty dressing yourself?			
13. Had problems doing up your shoe laces?			
14. Had problems writing clearly?			
15. Had difficulty cutting your food?			
16. Had difficulty holding a drink without spilling it?			
17. Felt depressed?			
18. Felt isolated and lonely?			
19. Felt weepy or tearful?			
20. Felt angry or bitter?			
21. Felt anxious?			
22. Felt worried about your future?			
23. Felt you had to conceal your Parkinson's from people?			
24. Avoided situations which involve eating or drinking in public?			
25. Felt embarrassed in public to having Parkinson's disease?			
26. Felt worried by other peoples' reaction to you?			
27. Had problems with your close personal relationships?			
28. Lacked support in the ways you need from your spouse or partner? NO spouse or partner check here <input type="checkbox"/>			
29. Lacked support in the ways you need from your family or close friends?			
30. Unexpectedly fallen asleep during the day?			
31. Had problems with your concentration e.g. when reading or watching TV?			
32. Felt your memory was bad?			
33. Had distressing dreams or hallucinations?			
34. Had difficulty with your speech?			
35. Felt unable to communicate with people properly?			
36. Felt ignored by people?			
37. Had painful muscle cramps or spasms?			
38. Had aches and pains in your joints or body?			
39. Felt unpleasantly hot or cold?			

GERIATRIC DEPRESSION SCALE

1. Are you basically satisfied with your life?	Yes / No
2. Have you dropped many of your activities and interests?	Yes / No
3. Do you feel that your life is empty?	Yes / No
4. Do you often get bored?	Yes / No
5. Are you hopeful about the future?	Yes / No
6. Are you bothered by thoughts you can't get out of your head?	Yes / No
7. Are you in good spirits most of the time?	Yes / No
8. Are you afraid that something bad is going to happen to you?	Yes / No
9. Do you feel happy most of the time?	Yes / No
10. Do you often feel helpless?	Yes / No
11. Do you often get restless and fidgety?	Yes / No
12. Do you prefer to stay at home, rather than going out and doing new things?	Yes / No
13. Do you frequently worry about the future?	Yes / No
14. Do you feel you have more problems with memory than most?	Yes / No
15. Do you think it is wonderful to be alive now?	Yes / No
16. Do you often feel downhearted and blue?	Yes / No
17. Do you feel pretty worthless the way you are now?	Yes / No
18. Do you worry a lot about the past?	Yes / No
19. Do you find life very exciting?	Yes / No
20. Is it hard for you to get started on new projects?	Yes / No
21. Do you feel full of energy?	Yes / No
22. Do you feel that your situation is hopeless?	Yes / No
23. Do you think that most people are better off than you are?	Yes / No
24. Do you frequently get upset over little things?	Yes / No
25. Do you frequently feel like crying?	Yes / No
26. Do you have trouble concentrating?	Yes / No
27. Do you enjoy getting up in the morning?	Yes / No
28. Do you prefer to avoid social gatherings?	Yes / No
29. Is it easy for you to make decisions?	Yes / No
30. Is your mind as clear as it used to be?	Yes / No

SPIELBERGER TRAIT ANXIETY INVENTORY**DIRECTIONS**

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you *generally* feel.

ALMOST NEVER SOMETIMES OFTEN ALMOST ALWAYS

- | | | | | |
|---|---|---|---|---|
| 21. I feel pleasant | 1 | 2 | 3 | 4 |
| 22. I feel nervous and restless | 1 | 2 | 3 | 4 |
| 23. I feel satisfied with myself | 1 | 2 | 3 | 4 |
| 24. I wish I could be as happy as others seem to be..... | 1 | 2 | 3 | 4 |
| 25. I feel like a failure | 1 | 2 | 3 | 4 |
| 26. I feel rested..... | 1 | 2 | 3 | 4 |
| 27. I am "calm, cool, and collected" | 1 | 2 | 3 | 4 |
| 28. I feel that difficulties are piling up so that I cannot overcome them..... | 1 | 2 | 3 | 4 |
| 29. I worry too much over something that really doesn't matter | 1 | 2 | 3 | 4 |
| 30. I am happy | 1 | 2 | 3 | 4 |
| 31. I have disturbing thoughts | 1 | 2 | 3 | 4 |
| 32. I lack self-confidence | 1 | 2 | 3 | 4 |
| 33. I feel secure | 1 | 2 | 3 | 4 |
| 34. I make decisions easily..... | 1 | 2 | 3 | 4 |
| 35. I feel inadequate | 1 | 2 | 3 | 4 |
| 36. I am content | 1 | 2 | 3 | 4 |
| 37. Some unimportant thought runs through my mind and bothers me..... | 1 | 2 | 3 | 4 |
| 38. I take disappointments so keenly that I can't put them out of my mind..... | 1 | 2 | 3 | 4 |
| 39. I am a steady person | 1 | 2 | 3 | 4 |
| 40. I get in a state of tension or turmoil as I think over my recent concerns and interests | 1 | 2 | 3 | 4 |

APATHY EVALUATION SCALE-CLINICIAN VERSION [AES-C]

Rate each item based on an interview of the subject. The interview should begin with a description of the subject's interest, activities and daily routine. Base your ratings on both verbal and non-verbal information. Ratings should be based on the past 4 weeks. For each item ratings should be judged:

1 = Not at All Characteristic**3 = Somewhat Characteristic****2 = Slightly Characteristic****4 = A Lot Characteristic**

	1. S/he is interested in things.	4
	2. S/he gets things done during the day.	4
	3. Getting things started on his/her own is important to her/him.	4
	4. S/he is interested in having new experiences.	4
	5. S/he is interested in learning new things.	4
	6. S/he puts little effort into anything.	4 <i>over A bit pt</i>
	7. S/he approaches life with intensity.	4
	8. Seeing a job through to the end is important to her/him.	4
	9. S/he spends time doing things that interest her/him.	4
	10. Someone has to tell her/him what to do each day	1
	11. S/he is less concerned about his/her problems than her/him should be.	1
	12. S/he has friends	3
	13. Getting together with friends is important to her/him.	4
	14. When something good happens, he/she gets excited.	4
	15. S/he has an accurate understanding of her/him problems.	4
	16. Getting things done during the day is important to her/him.	4
	17. S/he has initiative.	4
	18. S/he has motivation.	4

MAYO SLEEP QUESTIONNAIREAnswered by (please circle): **Informant** or **Participant**

*Informant: Do you sleep in the same room as the patient? Yes / No

**Answer "YES" to the below question if the described event has occurred at least 3 times.

1. Have you even seen the patient appear to "act out his/her dreams" while sleeping (punched, flailed arms in the air, shouting, screaming) NO (proceed to next page) YES

- If the answer is yes, how many months or years has this been going on?

____ Months _____ Yrs

(Score code for internal use only)

0=≤6mo 1=7mo-1yr 2=>1yr-1.5yrs 3=>1.5yrs-2yrs 4=>2yrs-5yrs 5=>5yrs-10yrs 6=>10yrs-15yrs 7=>15yrs-20yrs 8=>20yrs

- 1a. Has the patient ever been injured from these behaviors (bruises, cuts, broken bones)?

NO YES

- 1b. Has a bed partner even been injured from these behaviors (bruises, blows, pulled hair)?

NO YES No Bed Partner

- 1c. Has the patient told you about dreams of being chased, attacked or that involve defending himself/herself?

NO YES Never told you about dreams

- 1d. If the patient woke up and told you about a dream, did the details of the dream match the movements made while sleeping?

NO YES Never told you about dreams

2. Do the patient's legs repeatedly jerk or twitch during sleep (not just when falling asleep)?

NO YES

3. Does the patient complain of a restless, nervous, tingly, or creepy-crawly feeling in their legs that disrupts their ability to fall or stay asleep?

NO YES

3a. Does the patient tell you that these leg sensations decrease when walking around?

NO YES

3b. When do these sensations seem to be the worst? BEFORE 6 PM AFTER 6 PM

4. Has the patient ever walked around the bedroom or house while asleep?

NO YES

5. Has the patient ever snorted or choked him/herself awake

NO YES

6. Does the patient ever seem to stop breathing during sleep?

NO YES

6a. Is the patient currently being treated for this problem (e.g. CPAP machine)?

NO YES

7. Does the patient have leg cramps at night ("charlie horse"/ intense pain in certain leg muscles?)

NO YES

8. Please rate the patient's general level of alertness for the past 3 weeks (scale 0 = not alert to 10 = fully and normally alert/awake)

0 1 2 3 4 5 6 7 8 9 10

BRIEF PSCHIACTRIC RATING SCALE

	1=Not assessed 2=Very mild 3= Mild 4= Moderate 5= Moderately Severe	RATING
1	Somatic concern (Preoccupation with physical health , hypochondriasis)	1
2	Anxiety (Reported [not observed] worry, fear, for present or future)	
3	Depression (Sadness, unhappiness, preoccupation with depressing topics)	
4	Suicidality (Expressed desire, intent, or actions to harm or kill self)	
5	Guilt (Over-concern or remorse for past behavior)	
6	Hostility (Animosity, contempt, belligerence, etc.)	
7	Elevated mood (Pervasive, sustained, exaggerated feeling of well-being)	
8	Grandiosity (Exaggerated self-opinion, special abilities or powers)	
9	Suspiciousness (Belief that others have acted with malice/discrimination)	
10	Hallucinations (Perceptual experiences in the absence of external stimuli)	
11	Unusual thought content (Rate degree of unusualness)	
12	Bizarre behavior (Reports of odd, unusual, psychotically criminal)	
13	Self-neglect (Below socially acceptable standards of hygiene, appearance, etc.)	
14	Disorientation (Incomprehension of situations, communication, etc.)	
15	Conceptual disorganization (Degree to which speech is disconnected/confused)	
16	Blunted affect (Restricted range of emotional expression, marked indifference)	
17	Emotional withdrawal (Deficiency in ability to relate emotionally)	
18	Motor retardation (Reduction in energy level—slowed movement/speech)	
19	Tension (Observable physical/motor tension, agitation)	
20	Uncooperativeness (resistance to cooperate with the interview)	
21	Excitement (Heightened emotional tone/reactivity to interviewer or topics)	
22	Distractibility (Degree to which speech and actions are interrupted by stimuli)	
23	Motor hyperactivity (Increased energy level/rapid speech)	✓
24	Mannerisms and posturing (Unusual movements/acts/mannerisms)	1

NEUROPSYCHIATRIC INVENTORY (NPI)

A. DELUSIONS (NA)

Does the patient have beliefs that you know are not true (for example, insisting that people are trying to harm him/her or steal from him/her)? Has he/she said that family members are not who they say they are or that the house is not their home? I'm not asking about mere suspiciousness; I am interested if the patient is convinced that these things are happening to him/her.

(NO) If no, proceed to next screening question. YES (If yes, proceed to sub questions).

1. Does the patient believe that he/she is in danger - that others are planning to hurt him/her? _____
2. Does the patient believe that others are stealing from him/her? _____
3. Does the patient believe that his/her spouse is having an affair? _____
4. Does the patient believe that unwelcome guests are living in his/her house? _____
5. Does the patient believe that his/her spouse or others are not who they claim to be? _____
6. Does the patient believe that his/her house is not his/her home? _____
7. Does the patient believe that family members plan to abandon him/her? _____
8. Does the patient believe that television or magazine figures are actually present in the home? [Does he/she try to talk or interact with them?] _____
9. Does the patient believe any other unusual things that I haven't asked about? _____

If the screening question is confirmed, determine the frequency and severity of the delusions.

- Frequency:
1. Occasionally – less than once per week.
 2. Often – about once per week.
 3. Frequently – several times per week but less than every day.
 4. Very frequently – once or more per day.

- Severity:
1. Mild – delusions present but seem harmless and produce little distress for the patient.
 2. Moderate – delusions are distressing and disruptive.
 3. Marked – delusions are very disruptive and are a major source of behavioral disruption. [If PRN medications are prescribed, their use signals that the delusions are of marked severity.]

- Distress:
- How emotionally distressing do you find this behavior?
0. Not at all
 1. Minimally
 2. Mildly
 3. Moderately
 4. Severely
 5. Very severely or extremely

B. HALLUCINATIONS (NA)

Does the patient have hallucinations such as seeing false visions or hearing false voices? Does he/she seem to see, hear or experience things that are not present? By this question we do not mean just mistaken beliefs such as stating that someone who has died is still alive; rather we are asking if the patient actually has abnormal experiences of sounds or visions.

NO (If no, proceed to next screening question). YES (If yes, proceed to sub questions).

1. Does the patient describe hearing voices or act as if he/she hears voices? _____
2. Does the patient talk to people who are not there? _____
3. Does the patient describe seeing things not seen by others or behave as if he/she is seeing things not seen by others (people, animals, lights, etc.)? _____
4. Does the patient report smelling odors not smelled by others? _____
5. Does the patient describe feeling things on his/her skin or otherwise appear to be feeling things crawling or touching him/her? _____
6. Does the patient describe tastes that are without any known cause? _____
7. Does the patient describe any other unusual sensory experiences? _____

If the screening question is confirmed, determine the frequency and severity of the hallucinations.

- Frequency:
1. Occasionally – less than once per week.
 2. Often – about once per week.
 3. Frequently – several times per week but less than every day.
 4. Very frequently – once or more per day.

- Severity:
1. Mild – hallucinations are present but harmless and cause little distress for the patient.
 2. Moderate – hallucinations are distressing and are disruptive to the patient.
 3. Marked – hallucinations are very disruptive and are a major source of behavioral disturbance. PRN medications may be required to control them.

- Distress:
- How emotionally distressing do you find this behavior?
0. Not at all
 1. Minimally
 2. Mildly
 3. Moderately
 4. Severely
 5. Very severely or extremely

C. AGITATION/AGGRESSION (NA)

Does the patient have periods when he/she refuses to cooperate or won't let people help him/her? Is he/she hard to handle?

NO (If no, proceed to next screening question). YES (If yes, proceed to sub questions).

1. Does the patient get upset with those trying to care for him/her or resist activities such as bathing or changing clothes? _____
2. Is the patient stubborn, having to have things his/her way? _____
3. Is the patient uncooperative, resistive to help from others? _____
4. Does the patient have any other behaviors that make him/her hard to handle? _____
5. Does the patient shout or curse angrily? _____
6. Does the patient slam doors, kick furniture, throw things? _____
7. Does the patient attempt to hurt or hit others? _____
8. Does the patient have any other aggressive or agitated behaviors? _____

If the screening question is confirmed, determine the frequency and severity of the agitation/aggression.

Frequency:

1. Occasionally – less than once per week.
2. Often – about once per week.
3. Frequently – several times per week but less than daily.
4. Very frequently – once or more per day.

Severity:

1. Mild – agitation is disruptive but can be managed with redirection or reassurance.
2. Moderate – agitation is disruptive and difficult to redirect or control.
3. Marked – agitation is very disruptive and a major source of difficulty; there may be a threat of personal harm. Medications are often required.

Distress:

How emotionally distressing do you find this behavior?

0. Not at all
1. Minimally
2. Mildly
3. Moderately
4. Severely
5. Very severely or extremely

D. DEPRESSION/DYSPHORIA (NA)

Does the patient seem sad or depressed? Does he/she say that he/she feels sad or depressed?

(NO) (If no, proceed to next screening question). YES (If yes, proceed to sub questions).

1. Does the patient have periods of tearfulness or sobbing that seem to indicate sadness? _____
2. Does the patient say, or act as if, he/she is sad or in low spirits? _____
3. Does the patient put him/herself down or say that he/she feels like a failure? _____
4. Does the patient say that he/she is a bad person or deserves to be punished? _____
5. Does the patient seem very discouraged or say that he/she has no future? _____
6. Does the patient say he/she is a burden to the family or that the family would be better off without him/her? _____
7. Does the patient express a wish for death or talk about killing himself/herself? _____
8. Does the patient show any other signs of depression or sadness? _____

If the screening question is confirmed, determine the frequency and severity of the depression/dysphoria.

Frequency:

1. Occasionally – less than once per week.
2. Often – about once per week.
3. Frequently – several times per week but less than every day.
4. Very frequently – essentially continuously present.

Severity:

1. Mild – depression is distressing but usually responds to redirection or reassurance.
2. Moderate – depression is distressing; depressive symptoms are spontaneously voiced by the patient and difficult to alleviate.
3. Marked – depression is very distressing and a major source of suffering for the patient.

Distress:

How emotionally distressing do you find this behavior?

0. Not at all
1. Minimally
2. Mildly
3. Moderately
4. Severely
5. Very severely or extremely

E. ANXIETY (NA)

Is the patient very nervous, worried, or frightened for no apparent reason? Does he/she seem very tense or fidgety?
Is the patient afraid to be apart from you?

NO (If no, proceed to next screening question). YES (If yes, proceed to sub questions).

1. Does the patient say that he/she is worried about planned events? _____
2. Does the patient have periods of feeling shaky, unable to relax, or feeling excessively tense? _____
3. Does the patient have periods of [or complain of] shortness of breath, gasping, or sighing for no apparent reason other than nervousness? _____
4. Does the patient complain of butterflies in his/her stomach, or of racing or pounding of the heart in association with nervousness? [Symptoms not explained by ill health] _____
5. Does the patient avoid certain places or situations that make him/her more nervous such as riding in the car, meeting with friends, or being in crowds? _____
6. Does the patient become nervous and upset when separated from you [or his/her caregiver]? [Does he/she cling to you to keep from being separated?] _____
7. Does the patient show any other signs of anxiety? _____

If the screening question is confirmed, determine the frequency and severity of the anxiety.

Frequency:

1. Occasionally – less than once per week.
2. Often – about once per week.
3. Frequently – several times per week but less than every day.
4. Very frequently – once or more per day.

Severity:

1. Mild – anxiety is distressing but usually responds to redirection or reassurance.
2. Moderate – anxiety is distressing, anxiety symptoms are spontaneously voiced by the patient and difficult to alleviate.
3. Marked – anxiety is very distressing and a major source of suffering for the patient.

Distress:

- How emotionally distressing do you find this behavior?
0. Not at all
 1. Minimally
 2. Mildly
 3. Moderately
 4. Severely
 5. Very severely or extremely

F. ELATION/EUPHORIA (NA)

Does the patient seem too cheerful or too happy for no reason? I don't mean the normal happiness that comes from seeing friends, receiving presents, or spending time with family members. I am asking if the patient has a persistent and abnormally good mood or finds humor where others do not.

NO (If no, proceed to next screening question). **YES** (If yes, proceed to sub questions).

1. Does the patient appear to feel too good or to be too happy, different from his/her usual self? _____
2. Does the patient find humor and laugh at things that others do not find funny? _____
3. Does the patient seem to have a childish sense of humor with a tendency to giggle or laugh inappropriately (such as when something unfortunate happens to others)? _____
4. Does the patient tell jokes or make remarks that are not funny to others but seem funny to him/her? _____
5. Does he/she play childish pranks such as pinching or playing "keep away" for the fun of it? _____
6. Does the patient "talk big" or claim to have more abilities or wealth than is true? _____
7. Does the patient show any other signs of feeling too good or being too happy? _____

If the screening question is confirmed, determine the frequency and severity of the elation/euphoria.

Frequency:

1. Occasionally – less than once per week.
2. Often – about once per week.
3. Frequently – several times per week but less than every day.
4. Very frequently – essentially continuously present.

Severity:

1. Mild – elation is notable to friends and family but is not disruptive.
2. Moderate – elation is notably abnormal.
3. Marked – elation is very pronounced; patient is euphoric and finds nearly everything to be humorous.

Distress:

How emotionally distressing do you find this behavior?

0. Not at all
1. Minimally
2. Mildly
3. Moderately
4. Severely
5. Very severely or extremely

G. APATHY/INDIFFERENCE (NA)

Has the patient lost interest in the world around him/her? Has he/she lost interest in doing things or does he/she lack motivation for starting new activities? Is he/she more difficult to engage in conversation or in doing chores? Is the patient apathetic or indifferent?

NO (If no, proceed to next screening question). YES (If yes, proceed to sub questions).

1. Does the patient seem less spontaneous and less active than usual? _____
2. Is the patient less likely to initiate a conversation? _____
3. Is the patient less affectionate or lacking in emotions when compared to his/her usual self? _____
4. Does the patient contribute less to household chores? _____
5. Does the patient seem less interested in the activities and plans of others? _____
6. Has the patient lost interest in friends and family members? _____
7. Is the patient less enthusiastic about his/her usual interests? _____
8. Does the patient show any other signs that he/she doesn't care about doing new things? _____

If the screening question is confirmed, determine the frequency and severity of the apathy/indifference.

- Frequency:
1. Occasionally – less than once per week.
 2. Often – about once per week.
 3. Frequently – several times per week but less than every day.
 4. Very frequently – nearly always present.

- Severity:
1. Mild – apathy is notable but produces little interference with daily routines; only mildly different from patient's usual behavior; patient responds to suggestions to engage in activities.
 2. Moderate – apathy is very evident; may be overcome by the caregiver with coaxing and encouragement; responds spontaneously only to powerful events such as visits from close relatives or family members.
 3. Marked – apathy is very evident and usually fails to respond to any encouragement or external events.

- Distress:
- How emotionally distressing do you find this behavior?
0. Not at all
 1. Minimally
 2. Mildly
 3. Moderately
 4. Severely
 5. Very severely or extremely

H. DISINHIBITION (NA)

Does the patient seem to act impulsively without thinking? Does he/she do or say things that are not usually done or said in public? Does he/she do things that are embarrassing to you or others?

NO (If no, proceed to next screening question). **YES** (If yes, proceed to sub questions).

1. Does the patient act impulsively without appearing to consider the consequences? _____
2. Does the patient talk to total strangers as if he/she knew them? _____
3. Does the patient say things to people that are insensitive or hurt their feelings? _____
4. Does the patient say crude things or make sexual remarks that he/she would not usually have said? _____
5. Does the patient talk openly about very personal or private matters not usually discussed in public? _____
6. Does the patient take liberties or touch or hug others in way that is out of character for him/her? _____
7. Does the patient show any other signs of loss of control of his/her impulses? _____

If the screening question is confirmed, determine the frequency and severity of the disinhibition.

Frequency:

1. Occasionally – less than once per week.
2. Often – about once per week.
3. Frequently – several times per week but less than every day.
4. Very frequently – essentially continuously present.

Severity:

1. Mild – disinhibition is notable but usually responds to redirection and guidance.
2. Moderate – disinhibition is very evident and difficult to overcome by the caregiver.
3. Marked – disinhibition usually fails to respond to any intervention by the caregiver, and is a source of embarrassment or social distress.

Distress:

How emotionally distressing do you find this behavior?

0. Not at all
1. Minimally
2. Mildly
3. Moderately
4. Severely
5. Very severely or extremely

I. IRRITABILITY/LABILITY (NA)

Does the patient get irritated and easily disturbed? Are his/her moods very changeable? Is he/she abnormally impatient? We do not mean frustration over memory loss or inability to perform usual tasks; we are interested to know if the patient has abnormal irritability, impatience, or rapid emotional changes different from his/her usual self.

NO (If no, proceed to next screening question). YES (If yes, proceed to sub questions).

1. Does the patient have a bad temper, "flying off the handle" easily over little things? _____
2. Does the patient rapidly change moods from one to another, being fine one minute and angry the next? _____
3. Does the patient have sudden flashes of anger? _____
4. Is the patient impatient, having trouble coping with delays or waiting for planned activities? _____
5. Is the patient cranky and irritable? _____
6. Is the patient argumentative and difficult to get along with? _____
7. Does the patient show any other signs of irritability? _____

If the screening question is confirmed, determine the frequency and severity of the irritability/lability.

Frequency:

1. Occasionally – less than once per week.
2. Often – about once per week.
3. Frequently – several times per week but less than every day.
4. Very frequently – essentially continuously present.

Severity:

1. Mild – irritability or lability is notable but usually responds to redirection and reassurance.
2. Moderate – irritability and lability are very evident and difficult to overcome by the caregiver.
3. Marked – irritability and lability are very evident; they usually fail to respond to any intervention by the caregiver, and they are a major source of distress.

Distress:

- How emotionally distressing do you find this behavior?
0. Not at all
 1. Minimally
 2. Mildly
 3. Moderately
 4. Severely
 5. Very severely or extremely

J. ABERRANT MOTOR BEHAVIOR (NA)

Does the patient pace, do things over and over such as opening closets or drawers, or repeatedly pick at things or wind string or threads?

(NO (If no, proceed to next screening question). YES (If yes, proceed to sub questions).

1. Does the patient pace around the house without apparent purpose? _____
2. Does the patient rummage around opening and unpacking drawers or closets? _____
3. Does the patient repeatedly put on and take off clothing? _____
4. Does the patient have repetitive activities or "habits" that he/she performs over and over? _____
5. Does the patient engage in repetitive activities such as handling buttons, picking, wrapping string, etc? _____
6. Does the patient fidget excessively, seem unable to sit still, or bounce his/her feet or tap his/her fingers a lot? _____
7. Does the patient do any other activities over and over? _____

If the screening question is confirmed, determine the frequency and severity of the aberrant motor activity:

Frequency: 1. Occasionally – less than once per week.

2. Often – about once per week.

3. Frequently – several times per week but less than every day.

4. Very frequently – essentially continuously present.

Severity: 1. Mild – abnormal motor activity is notable but produces little interference with daily routines.

2. Moderate – abnormal motor activity is very evident; can be overcome by the caregiver.

3. Marked – abnormal motor activity is very evident, usually fails to respond to any intervention by the caregiver and is a major source of distress.

Distress: How emotionally distressing do you find this behavior?

0. Not at all

1. Minimally

2. Mildly

3. Moderately

4. Severely

5. Very severely or extremely

K. SLEEP AND NIGHTTIME BEHAVIOR DISORDERS (NA)

Does the patient have difficulty sleeping (do not count as present if the patient simply gets up once or twice per night only to go to the bathroom and falls back asleep immediately)? Is he/she up at night? Does he/she wander at night, get dressed, or disturb your sleep?

NO (If no, proceed to next screening question). **YES** (If yes, proceed to sub questions).

1. Does the patient have difficulty falling asleep? _____
2. Does the patient get up during the night (do not count if the patient gets up once or twice per night only to go to the bathroom and falls back asleep immediately)? _____
3. Does the patient wander, pace, or get involved in inappropriate activities at night? _____
4. Does the patient awaken you during the night? _____
5. Does the patient wake up at night, dress, and plan to go out, thinking that it is morning and time to start the day? _____

6. Does the patient awaken too early in the morning (earlier than was his/her habit)? _____
7. Does the patient sleep excessively during the day? _____
8. Does the patient have any other nighttime behaviors that bother you that we haven't talked about? _____

If the screening question is confirmed, determine the frequency and severity of the nighttime behavior.

Frequency: 1. Occasionally – less than once per week.

2. Often – about once per week.

3. Frequently – several times per week but less than every day.

4. Very frequently – once or more per day (every night).

Severity: 1. Mild – nighttime behaviors occur but they are not particularly disruptive.

2. Moderate – nighttime behaviors occur and disturb the patient and the sleep of the caregiver; more than one type of nighttime behavior may be present.

3. Marked – nighttime behaviors occur; several types of nighttime behavior may be present; the patient is very distressed during the night and the caregiver's sleep is markedly disturbed.

Distress: How emotionally distressing do you find this behavior?

0. Not at all

1. Minimally

2. Mildly

3. Moderately

4. Severely

5. Very severely or extremely

L. APPETITE AND EATING DISORDERS (NA)

Has he/she had any change in appetite, weight, or eating habits (count as NA if the patient is incapacitated and has to be fed)? Has there been any change in type of food he/she prefers?

NO (If no, proceed to next screening question). YES (If yes, proceed to sub questions).

1. Has he/she had a loss of appetite? _____
2. Has he/she had an increase in appetite? _____
3. Has he/she had a loss of weight? _____
4. Has he/she gained weight? _____
5. Has he/she had a change in eating behavior such as putting too much food in his/her mouth at once? _____
6. Has he/she had a change in the kind of food he/she likes such as eating too many sweets or other specific types of food? _____

7. Has he/she developed eating behaviors such as eating exactly the same types of food each day or eating the food in exactly the same order? _____
8. Have there been any other changes in appetite or eating that I haven't asked about? _____

If the screening question is confirmed, determine the frequency and severity of the changes in eating habits or appetite.

Frequency:

1. Occasionally – less than once per week.
2. Often – about once per week.
3. Frequently – several times per week but less than every day.
4. Very frequently – once or more per day or continuously.

Severity:

1. Mild – changes in appetite or eating are present but have not led to changes in weight and are not disturbing.
2. Moderate – changes in appetite or eating are present and cause minor fluctuations in weight.
3. Marked – obvious changes in appetite or eating are present and cause fluctuations in weight, are embarrassing, or otherwise disturb the patient.

Distress:

How emotionally distressing do you find this behavior?

0. Not at all
1. Minimally
2. Mildly
3. Moderately
4. Severely
5. Very severely or extremely

PARKINSON'S DISEASE- COGNITIVE FUNCTIONAL RATING SCALE (PD-CFRS)

0 = Never 1 = Some of the time 2 = Most of the time 8= Never done activity in the past

	Questions	Score			
1	Have you had any trouble handling your money? For example, counting change or calculating the necessary amount of money for going shopping or for groceries, etc.	(0)	1	2	8
2	Have you had trouble handling your personal finances? For example, your bank account(s) or check book?	(0)	1	2	8
3	Have you had trouble planning holiday activities or meeting with family or friends?	(0)	1	2	8
4	Have you had trouble handling or keeping track of your personal mail, bills, or doctor appointments?	(0)	1	2	8
5	Have you had trouble managing your medications? For example your doses and times you need to take your medications?	(0)	1	2	8
6	Have you had trouble organizing your daily activities?	(0)	1	2	8
7	Recently, have you had any difficulty understanding how to use electrical appliances in your home?	(0)	1	2	8
8	Have you had trouble knowing how to use public transportation to get to a specific place?	(0)	1	2	8
9	Have you had problems dealing with unplanned events?	(0)	1	2	8
10	Have you had any trouble explaining the things you want to say?	0	(1)	2	8
11	Have you had any trouble understanding the things you read: books, magazines, newspapers?	(0)	1	2	8
12	Have you had any trouble understanding how to use a cell phone?	(0)	1	2	8
Total Score: _____ (0-24)					

INSTRUMENTAL ACTIVITIES OF DAILY LIFE & PHYSICAL SELF-MAINTENANCE SCALE

This questionnaire must be filled out by a family member or other caregiver who has frequent contact with the participant. The following questions are designed to provide us with information concerning your family member's abilities in the various areas of daily living skills. Check only one statement that best describes the patient's behavior. Please answer the question honestly and completely. Thank you for your cooperation.

1. Telephone Use

- A. Operates telephone on own initiative – looks up and dials numbers, etc.
 B. Dials a few well known numbers
 C. Answers the telephone, but does not dial
 D. Does not use telephone at all

2. Shopping

- A. Takes care of all shopping needs independently
 B. Shops independently for small purchases
 C. Needs to be accompanied on any shopping trip
 D. Completely unable to shop

3. Food Preparation

- A. Plans, prepares, and serves adequate meals independently
 B. Prepares adequate meals if supplied with ingredients
 C. Heats and serves prepared meals, or prepares meals but does not maintain an adequate diet
 D. Needs to have meals prepared and served

4. Housekeeping

- A. Maintains house alone or with occasional assistance (e.g. "heavy-work domestic help")
 B. Performs light daily tasks such as dish-washing, bed-making, etc.
 C. Performs light daily tasks, but cannot maintain acceptable level of cleanliness
 D. Needs help with all home maintenance tasks
 E. Does not participate in any housekeeping tasks

5. Laundry

- A. Does personal laundry completely
 B. Launders small items – rinses socks, stockings, etc.
 C. All laundry must be done by others

6. Mode of Transportation

- A. Travels independently on public transportation or drives own car
 B. Arranges own travel via taxi, but does not otherwise use public transportation
 C. Travels on public transportation when accompanied by another
 D. Travel limited to taxi or automobile with assistance of another
 E. Does not travel at all

7. Responsibility for own Medications

- A. Is responsible for taking medication in correct dosages at correct time
 B. Takes responsibility if medication is prepared in advance in separate dosages
 C. Is not capable of dispensing own medication

8. Ability to Handle Finances

- A. Manages financial matters independently (budgets, writes checks, pays rent/bills, goes to bank, collects and keeps track of income)
 B. Manages day-to-day purchases, but needs help with banking, major purchases, etc.
 C. Incapable of handling money

Toileting

- A. Cares for self at toilet completely, no incontinence
 B. Needs to be reminded, or needs help in cleaning self, or has rare (weekly at most) accidents
 C. Soiling or wetting while asleep more than once a week
 D. soiling or wetting while awake more than once a week
 E. No control of bowels or bladder

10. Feeding

- A. Eats without assistance
 B. Eats with minor assistance at meal-times and/or with special preparation for food, or with help cleaning up after meals
 C. Feeds self with moderate assistance and is untidy
 D. Requires extensive assistance for all meals
 E. Does not feed self at all and resists efforts of other to feed him/her

11. Dressing

- A. Dresses , undresses, and selects clothes from own wardrobe
 B. Dresses and undresses self with minor assistance
 C. Needs moderate assistance in dressing or selection of clothes
 D. Needs major assistance in dressing, but cooperates with efforts of others to help
 E. Completely unable to dress self and resists efforts of other to help

12. Grooming

- A. Always neatly dressed, well-groomed, without assistance
 B. Grooms self adequately with occasional minor assistance (e.g. shaving)
 C. Needs moderate and regular assistance or supervision in grooming
 D. Needs total grooming care, but can remain well-groomed after help from other
 E. Actively negates all efforts of other to maintain grooming

13. Physical Ambulation

- A. Goes about grounds or city
 B. Ambulates within residence or about one block distance
 C. Ambulates with assistance of another person, railing, cane, walker, wheelchair
 D. Sits unsupported in chair or wheelchair, but cannot propel self without help
 E. Bedridden more than half the time

14. Bathing

- A. Bathes self (tub, shower, sponge bath) without help
 B. Bathes self with help getting in and out of tub
 C. Washes face and hands only, but cannot bathe rest of body
 D. Does not wash self, but is cooperative with those who bathe him/her
 E. Does not try to wash self and resists effort to keep him/her clean

MDS-revised UPDRS PART I: NON-MOTOR ASPECTS OF EXPERIENCES OF DAILY LIVING

Primary source of information:

Patient

Caregiver

Patient and Caregiver in Equal Proportion

To be read to the patient: I am going to ask you six questions about behaviors that you may or may not experience. Some questions concern common problems and some concern uncommon ones. If you have a problem in one of the areas, please choose the best response that describes how you have felt MOST OF THE TIME during the PAST WEEK. If you are not bothered by a problem, you can simply respond NO. I am trying to be thorough, so I may ask questions that have nothing to do with you.

<p>1.1 Cognitive Impairment (Over the past week have you had problems remembering things, following conversations, paying attention, thinking clearly, or finding your way around the house or in town?)</p> <p>0: Normal: No cognitive impairment</p> <p>1: Slight: Impairment appreciated by patient or caregiver with no concrete interference with the patient's ability to carry out normal activities and social interactions</p> <p>2: Mild: Clinically evident cognitive dysfunction, but only minimal interference with the patient's ability to carry out normal activities and social interactions.</p> <p>3: Moderate: Cognitive deficits interfere with but do not preclude the patient's ability to carry out normal activities and social interactions.</p> <p>4: Severe: Cognitive dysfunction precludes the patient's ability to carry out normal activities and social interactions.</p>	<p>1.2 Hallucinations and Psychosis (Over the past week, have you seen, heard, smelled, or felt things that were not really there?)</p> <p>0: Normal: No hallucinations or psychotic behavior</p> <p>1: Slight: Illusions or non-formed hallucinations, but patient recognizes them without loss of insight.</p> <p>2: Mild: Formed hallucinations independent of environment stimuli. No loss of insight.</p> <p>3: Moderate: Formed hallucinations with loss of insight.</p> <p>4: Severe: Patient has delusions or paranoia.</p>
<p>1.3 Depressed Mood (Over the past week, have you felt low, sad, hopeless, or unable to enjoy things? If yes, was this feeling for longer than one day at a time? Did it make it difficult for you to carry out your usual activities or to be with people?)</p> <p>0: Normal: No depressed mood</p> <p>1: Slight: Episodes of depressed mood that are not sustained for more than one day at a time. No interference with the patient's ability to carry out normal activities and social interactions</p> <p>2: Mild: Depressed mood that is sustained over days, but without interference with normal activities and social interactions.</p> <p>3: Moderate: Depressed mood that interferes with, but does not preclude the patient's ability to carry out normal activities and social interactions.</p> <p>4: Severe: Depressed mood precludes the patient's ability to carry out normal activities and social interactions</p>	<p>1.4 Anxious Mood (Over the past week, have you felt nervous, worried, or tense? If yes, was this feeling for longer than one day at a time? Did it make it difficult for you to follow your usual activities or to be with other people?)</p> <p>0: Normal: No anxious feelings</p> <p>1: Slight: Anxious feeling present but not sustained for more than one day at a time. No interference with the patient's ability to carry out normal activities and social interactions</p> <p>2: Mild: Anxious feelings are sustained over more than one day at a time, but without interference with the patient's ability to carry out normal activities and social interactions.</p> <p>3: Moderate: Anxious feeling interfere with, but do not preclude the patient's ability to carry out normal activities and social interactions.</p> <p>4: Severe: Anxious feelings preclude the patient's ability to carry out normal activities and social interactions</p>

1.5 Apathy (Over the past week, have you felt different to doing activities or being with people?)

0: Normal: No apathy

1: Slight: Apathy appreciated by patient or caregiver with no concrete interference with the patient's ability to carry out normal activities and social interactions

2: Mild: Apathy interferes with isolated activities and social interactions.

3: Moderate: Apathy interferes with most activities and social interactions.

4: Severe: Passive and withdrawn, complete loss of initiative.

1.6 Features of Dopamine Dysregulation Syndrome

(Over the past week, have you had unusually strong urges that are hard to control? Do you feel driven to do or think about something and find it hard to stop?)

0: Normal: No problems present

1: Slight: Problems are present but usually do not cause any difficulties for the patient or family/caregiver.

2: Mild: Problems are present and usually cause a few difficulties in the patients' personal and family life.

3: Moderate: Problems are present and usually cause a lot of difficulties in the patient's personal and family life.

4: Severe: Problems are present and preclude the patient's ability to carry out normal activities or social interactions or to maintain previous standards in personal and family life.

MDS-revised UPDRS Part I - II: Patient Questionnaire

Instructions:

This questionnaire will ask you about your experiences of daily living.

There are 20 questions. We are trying to be thorough, and some of these questions may therefore not apply to you now or ever. If you do not have the problem, simply mark 0 for NO.

Please read each one carefully and read all answers before selecting the one that best applies to you.

We are interested in your average or usual function over the past week including today. Some patients can do things better at one time of the day than at other. However, only one answer is allowed for each question, so please mark the answer that best describes what you can do most of the time.

You may have other medical conditions besides Parkinson's disease. Do not worry about separating Parkinson's disease from other conditions. Just answer the question with your best response.

Use only 0, 1, 2, 3, 4 for answers, nothing else. Do not leave any blanks.

Your doctor or nurse can review the questions with you, but this questionnaire is for patients to complete, either alone or with their caregivers.

Who is filling out this questionnaire (check the best answer):

Patient

Caregiver

Patient and Caregiver in Equal Proportion

Questionnaire begins on next page

Part I: Non-motor Aspects of Experiences of Daily Living**1.7 Sleep Problems**

Over the past week, have you had trouble going to sleep at night or staying asleep through the night? Consider how rested you felt after waking up in the morning.

0: Normal: No problems.

1: Slight: Sleep problems are present but usually do not cause trouble getting a full night of sleep.

2: Mild: Sleep problems usually cause some difficulties getting a full night of sleep.

3: Moderate: Sleep problems cause a lot of difficulties getting a full night of sleep, but I still usually sleep for more than half the night.

4: Severe: I usually do not sleep for most of the night.

1.9 Pain and other Sensations

Over the past week, have you had uncomfortable feelings in your body like pain, aches, tingling, or cramps?

0: Normal: No uncomfortable feelings.

1: Slight: I have these feelings. However, I can do things and be with other people without difficulty.

2: Mild: These feelings cause some problems when I do things or am with other people.

3: Moderate: These feelings cause a lot of problems, but they do not stop me from doing things or being with other people.

4: Severe: These feelings stop me from doing things or being with other people.

1.11 Constipation Problems

Over the past week, have you had constipation troubles that cause you difficulty moving your bowels?

0: Normal: No constipation.

1: Slight: I have been constipated. I use extra effort to move my bowels. However, this problem does not disturb my activities or my being comfortable.

2: Mild: Constipation causes me to have some troubles doing things or be uncomfortable.

3: Moderate: Constipation causes me to have a lot of trouble doing things or being comfortable. However, it does not stop me from doing anything.

4: Severe: I usually need physical help from someone else to empty my bowels.

1.8 Daytime Sleepiness >

Over the past week, have you had trouble staying awake during the daytime?

0: Normal: No daytime sleepiness.

1: Slight: Daytime sleepiness occurs but I can resist and I stay awake.

2: Mild: Sometimes I fall asleep when alone and relaxing. For example, while reading or watching TV.

3: Moderate: I sometimes fall sleep when I should not. For example, while eating or talking with other people.

4: Severe: I often fall asleep when I should not. For example, while eating or talking with other people.

1.10 Urinary Problems

Over the past week, have you had trouble with urine control? For example, an urgent need to urinate, a need to urinate too often, or urine accidents?

0: Normal: No urine control problems.

1: Slight: I need to urinate often or urgently. However, these problems do not cause difficulties with my daily activities.

2: Mild: Urine problems cause difficulties with my daily activities. However, I do not have urine accidents.

3: Moderate: Urine problems cause a lot of difficulties with my daily activities, including urine accidents.

4: Severe: I cannot control my urine and use a protective garment or have a bladder tube.

1.12 Light Headedness on Standing

Over the past week, have you felt faint, dizzy or foggy when you stand up after sitting or lying down?

0: Normal: No dizzy or foggy feelings.

1: Slight: Dizzy or foggy feelings occur. However, they do not cause me trouble doing things.

2: Mild: Dizzy or foggy feelings cause me to hold on to something, but I do not need to sit or lie back down.

3: Moderate: Dizzy or foggy feelings cause me to sit or lie down to avoid fainting or falling.

4: Severe: Dizzy or foggy feelings cause me to fall or faint.

(Continue on next page)

1.13 Fatigue

Over the past week, have you usually felt fatigued? This feeling is not part of being sleepy or sad.

0: Normal: No fatigue.

1: Slight: Fatigue occurs. However, it does not cause me troubles doing things or being with people.

2: Mild: Fatigue causes me some troubles doing things or being with people.

3: Moderate: Fatigue causes me a lot of troubles doing things or being with people. However, it does not stop me from doing anything.

4: Severe: Fatigue stops me from doing things or being with people.

Part II: Motor Aspects of Experiences of Daily Living**2.1 Speech**

Over the past week, have you had problems with your speech?

0: Normal: Not at all.

1: Slight: my speech is soft, slurred or uneven, but it does not cause other to ask me to repeat myself.

2: Mild: My speech cause people to ask me to occasionally repeat myself, but not everyday.

3: Moderate: My speech is unclear enough that others ask me to repeat myself every day even though most of my speech is understood.

4: Severe: Most or all of my speech cannot be understood.

2.2 Saliva & Drooling

Over the past week, have you usually had too much saliva when you are awake or when you sleep?

0: Normal: Not at all.

1: Slight: I have too much saliva, but do not drool.

2: Mild: I have some drooling during sleep, but none when I am awake.

3: Moderate: I have some drooling when I am awake, but I usually do not need tissues or a handkerchief.

4: Severe: I have so much drooling that I regularly need to use tissues or a handkerchief to protect my clothes.

2.3 Chewing and Swallowing

Over the past week, have you usually had problems swallowing pills or eating meals? Do you need your pills cut or crushed or your meals be made soft, chopped or blended to avoid choking?

0: Normal: Not at all.

1: Slight: I am aware of slowness in my chewing or increased effort at swallowing, but I do not choke or need to have my food specially prepared.

2: Mild: I need to have my pills cut or my food specially prepared because of chewing or swallowing problems, but I have not choked over the past week.

3: Moderate: I choked at least once in the past week.

4: Severe: Because of chewing and swallowing problem, I need a feeding tube.

2.4 Eating Tasks

Over the past week, have you usually had troubles handling your food and using eating utensils? For example, do you have trouble handling finger foods or using forks, knives, spoons, chopsticks?

0: Normal: Not at all.

1: Slight: I am slow, but I do not need any help handling my food and have not had food spills while eating.

2: Mild: I am slow with my eating and have occasional food spills. I may need help with a few tasks such as cutting meat.

3: Moderate: I need help with many eating tasks but can manage some alone.

4: Severe: I need help for most or all eating tasks.

2.5 Dressing

Over the past week, have you usually had problems dressing? For example, are you slow or do you need help with buttoning, using zippers, putting on or taking off your clothes or jewelry?

0: Normal: Not at all.

1: Slight: I am slow but I do not need help.

2: Mild: I am slow and need help for a few dressing tasks (buttons, bracelets).

3: Moderate: I need help for many dressing tasks.

4: Severe: I need help for most or all dressing tasks.

2.6 Hygiene

Over the past week, have you usually been slow or do you need help with washing, bathing, shaving, brushing teeth, combing your hair or with other personal hygiene?

0: Normal: Not at all.

1: Slight: I am slow but I do not need any help.

2: Mild: I need someone else to help me with some hygiene tasks.

3: Moderate: I need help from many hygiene tasks.

4: Severe: I need help for most or all of my hygiene tasks.

2.7 Handwriting

Over the past week, have people usually had trouble reading your handwriting?

0: Normal: Not at all.

1: Slight: My writing is slow, clumsy, or uneven, but all words are clear.

2: Mild: Some words are unclear and difficult to read.

3: Moderate: Many words are unclear and difficult to read.

4: Severe: Most or all words cannot be read.

2.8 Doing Hobbies and other Activities

Over the past week, have you usually had trouble doing your hobbies or other things that you like to do?

0: Normal: Not at all.

1: Slight: I am a bit slow but do these activities easily.

2: Mild: I have some difficulty doing these activities.

3: Moderate: I have major problems doing these activities, but still do most.

4: Severe: I am unable to do most or all of these activities.

2.9 Turning in Bed

Over the past week, do you usually have trouble turning over in bed?

0: Normal: Not at all.

1: Slight: I have a bit of trouble turning, but I do not need any help.

2: Mild: I have a lot of trouble turning and need occasional help from someone else.

3: Moderate: To turn over I often need help from someone else.

4: Severe: I am unable to turn over without the help from someone else.

2.10 Tremor

Over the past week, have you usually had shaking or tremor?

0: Normal: Not at all.

1: Slight: Shaking or tremor occurs but does not cause problems with any activities.

2: Mild: Shaking or tremor causes problems with only a few activities.

3: Moderate: Shaking or tremor causes problems with many of my daily activities.

4: Severe: Shaking or tremor cause problems with most or all activities.

2.11 Getting out of Bed, a Car, or a Deep Chair

Over the past week, have you usually had trouble getting out of bed, a car seat, or a deep chair?

0: Normal: Not at all.

1: Slight: I am slow or awkward, but I usually can do it on my first try.

2: Mild: I need more than one try to get up or need occasional help.

3: Moderate: I sometimes need help to get up, but most times I can still do it on my own.

4: Severe: I need help most or all of the time.

2.12 Walking and Balance

Over the past week, have you usually had problems with balance and walking?

0: Normal: Not at all

1: Slight: I am slightly slow or may drag a leg. I never use a walking aid.

2: Mild: I occasionally use a walking aid, but I do not need any help from another person.

3: Moderate: I usually use a walking aid (cane, walker) to walk safely without falling. However, I do not usually need the support of another person.

4: Severe: I usually use the support of another person to walk safely without falling.

2.13 Freezing

Over the past week, on your usual day when walking, do you suddenly stop or freeze as if your feet are stuck to the floor?

0: Normal: Not at all

1: Slight: I briefly freeze but I can easily start walking

again. I do not need help from someone else or a walking aid (cane or walker) because of freezing.

2: Mild: I freeze and have trouble starting to walk again and, because of freezing, I sometimes need to use a walking aid or need someone else's help.

3: Moderate: When I freeze, I have a lot of trouble starting to walk again and, because of freezing, I sometimes need to use a walking aid or need someone else's help.

4: Severe: Because of freezing, most or all of the time, I need to use a walking aid or someone's help.

MDS-revised UPDRS Part IV: Motor Complications

Overview and Instructions: In this section, the rater uses historical and objective information to assess two motor complications, dyskinesias and motor fluctuations that include OFF-state dystonia. Use all information from patient, caregiver, and the examination to answer the six questions that summarize function over the past week including today. As in the other sections, rate using only integers (no half points allowed) and leave no missing ratings. If the item cannot be rated, place UR for Unable to Rate. You will need to choose some answers based on percentages, and therefore you will need to establish how many hours generally are "awake" hours and use this figure as the denominator for "OFF" time and Dyskinesias. For "OFF dystonia", the total "OFF" time will be the denominator.

Operational definitions for examiner's use:

Dyskinesias: Involuntary random movements

Words that patients often recognize for dyskinesias include "irregular jerking", "wiggling", "twitching". It is essential to stress to the patient the difference between dyskinesias and tremor, a common error when patients are assessing dyskinesias.

Part IV: A. Dyskinesias

4.1 Time Spent with Dyskinesias

Instructions to examiner: Determine the hours in the usual waking day and then the hours of dyskinesias. Calculate the percentage. If the patient has dyskinesias in the office, you can point them out as a reference to ensure that patients and caregivers understand what they are rating. You may also use your own acting skills to enact the dyskinetic movements you have seen in the patient before or show them dyskinetic movements typical of other patients. Exclude from this question early morning and nighttime painful dystonia.

Instructions to patient [and caregiver]. Over the past week, how many hours do you usually sleep on a daily basis, including nighttime sleep and daytime napping? Alright, if you sleep _____ hrs, you are awake _____ hrs. Out of those awake hours, how many hours in total do you have wiggling, twitching or jerking movements? Do not count the times when you have tremor, which is a regular back and forth shaking or times when you have painful foot cramps or spasms in the early morning or at nighttime. I will ask about those later. Concentrate only on these types of wiggling, jerking and irregular movements. Add up all the time during the waking day when these usually occur. How many hours _____ (use this number for your calculation).

Time spent awake _____ hrs. Time spent with dyskinesias _____ hrs. % Dyskinesia _____ %

0: Normal: No dyskinesias.

1: Slight: $\leq 25\%$ of waking day.

2: Mild: 26 – 50% of waking day.

3: Moderate: 51 – 75% of waking day.

4: Severe: $> 75\%$ of waking day

4.2 Functional Impact of Dyskinesias

Instructions to examiner: Determine the degree to which dyskinesias impact on the patient's daily function in terms of activities and social interactions. Use the patient's and caregiver's response to your question and your own observations during the office visit to arrive at the best answer.

Instructions to patient [and caregiver]: Over the past week, did you usually have trouble doing things or being with people when these jerking movements occurred? Did they stop you from doing things or from being with people?

0: Normal: No dyskinesias or no impact on social interactions and activities.

1: Slight: Dyskinesias impact on a few activities, but the patient performs all activities during dyskinetic periods.

2: Mild: Dyskinesias impact on many activities.

3: Moderate: Dyskinesias impact to the point that the patient does not perform some activities.

4: Severe: Patient does not perform most activities during dyskinetic episodes.

NEUROPSYCHOLOGICAL ASSESSMENT

GENDER	M	MMS	30
AGE	77	MOCA	26
HAND	RT	PDCRS	93
EDUCATION	19	JOLO	28
SMELL	30/40	BNT	27

WAIS-III	Subtest	Raw	Scaled
	Digit Symbol (coding):	48	10
Matrix Reasoning :		22	18
Digit FW:		12	—
Digit BW:		9	—
Digit Total:		21	—
Information:		25	16

CVLT-II	Subtest	Raw	Scaled
	CVLT-1:	9	3.0
CVLT-2:		11	2.0
CVLT-3:		12	1.5
CVLT-4:		13	1.5
CVLT-5:		14	2.0
CVLT-STM:		13	2.0
CVLT-LTM:		14	2.0
RECOGNITION:		14	0.0

REACTION TIME TEST	RXN R/L	280	SD	70
	CHOICE	587	SD	180
	CONDITIONAL	1288	SD	375

D-KEFS		Raw	Scaled
	STROOP-I:	82.1	
	STROOP-II:	95.8	
	STROOP-III: error	200 202.8	
	STROOP-IV:	190.8	
Subtest		Raw	Scaled
SORTING-1:		20	
SORTING-2:		20	
RECOGN-1:		20	
RECOGN-2:		16	

F	A	S	ANIMALS
12	17	18	17
FAS TOTAL 47	FAS SCALED 14		

TRAIL MAKING TEST	TMT 1	26.4	
	TMT 2	43.1	
	TMT 3	51.4	
	TMT 4	105.9	
	TMT 5	30.3	

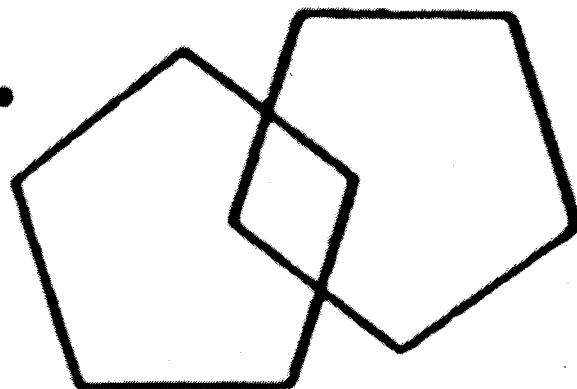
WMS III	Design A	10	
	Design B	10	TOTAL 92
	Design C	17	
	Design D	34	SCALED 15
	Design E	21	

REACTION TIME TEST	RXN R/L	SD
	CHOICE	SD
	CONDITIONAL	SD

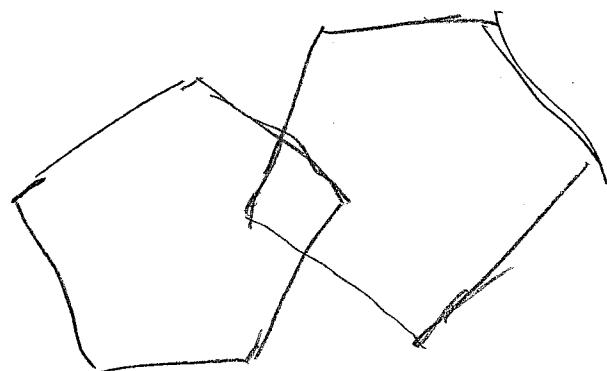
DRS	RAW	AMSS	PERCENT
	ATT 37	13	82-89
	I/P 36	16	41-59
	CONST 6	10	41-59
	CONCEPT 35	10	41-59
	MEMORY 25	13	82-89
	TOTAL RAW 140	T.AMSS: 12	AEMSS: 10.5

MMSE

Score	max		
5	5	ORIENTATION What is the year, season, date, day, month?	Score one point for each correct answer
5	5	Where are we state, country, town, building/office, floor?	Score one point for each correct answer
3 <i>(on first try only)</i>	3 <i>(on first try only)</i>	REGISTRATION Apple, cable, penny Trials: <u>1</u>	Say the names of 3 unrelated objects, clearly and slowly, about one second for each. After you have said all 3, ask the patient to repeat them. This first repetition determines his/her score (0-3) but keep saying them until he/she can repeat all 3, up to 6 trials. If all 3 are not eventually learned, recall cannot be meaningfully tested but should nevertheless be attempted.
5	5	ATTENTION & CALCULATION Ask the subject to begin with 100 and count backward by 7. Stop after 5 subtractions (93, 86, 79, 72, 65).	Score the total number of correct answers.
5	(5)	If the subject cannot or will not perform this task, ask him/her to spell the word "WORLD" backwards. <i>DL R OW</i>	The score is the numbers of letters in correct order (eg, DLROW=5; DLRW=4; DLORW, DLW=3; OW=2; DRLWO=1).
3 <i>(no clues)</i>	3 <i>(no clues)</i>	RECALL Ask the subject to recall the three words you previously asked him or her to remember.	Score 0-3.
2	2	LANGUAGE NAMING: Name a pencil and watch (2)	One point for each correct answer
3	3	COMPREHENSION LISTEN (3-step): POINT WITH YOUR RIGHT HAND TO YOUR LEFT EAR WITH YOUR EYES CLOSED (3)	Score one point for each of the three steps correctly performed
1	1	COMPREHENSION READING & OBEYING: <i>close your eyes (1)</i> <u>CLOSE YOUR EYES</u>	Ask him/her to read it and do what it says. Allow only one trial. Score 1 point only if he actually closes his eyes.
1	1	EXPRESSION REPETITION: No ifs, ands or buts (1)	
1	1	EXPRESSION WRITING: Write a sentence below (1) "Today is a sunny day in Ann Arbor"	Correct grammar and punctuation are not necessary.
Time: <i>16.8</i> (s)	x	Also: time to completion (seconds)	
1	1	COPY THE DESIGN BELOW (ON NEXT PAGE)	Ask him/her to copy it exactly as it is. All 10 angles must be present, and 2 must intersect to score 1 point. Tremor and rotation are ignored.

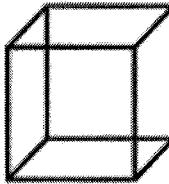
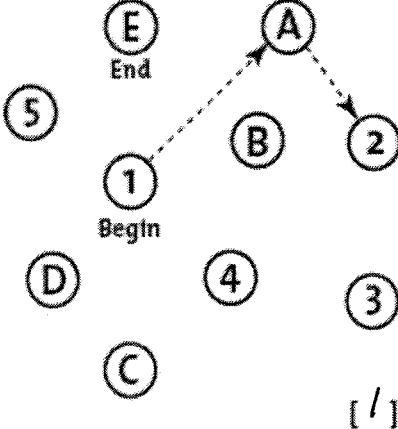
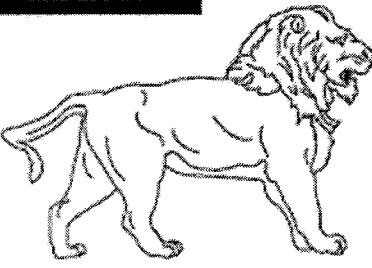
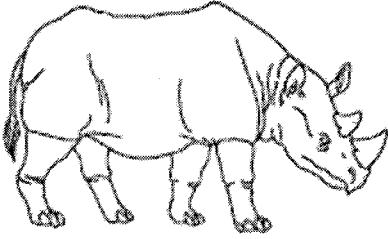
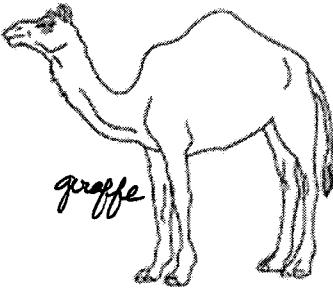


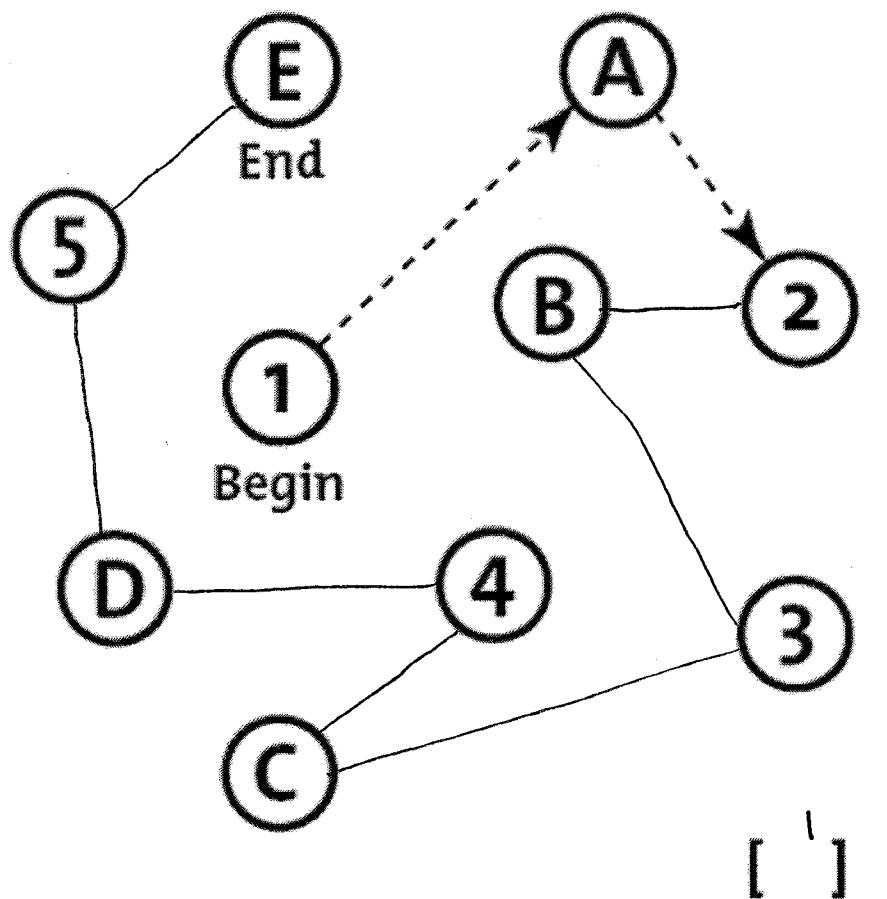
SUM 30 / 30



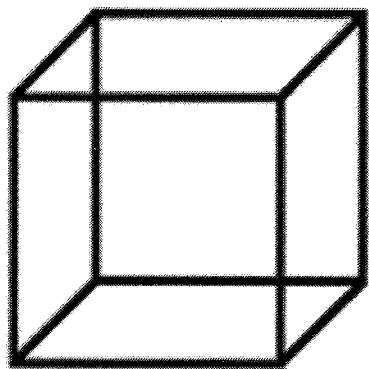
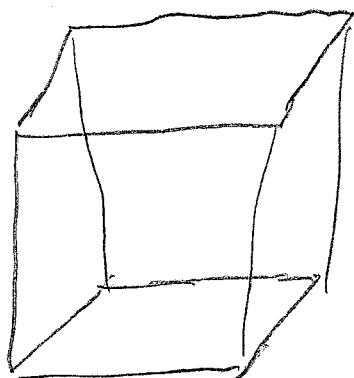
Today is a sunny Day in Ann Arbor.

MONTREAL COGNITIVE ASSESSMENT (MoCA)

VISUOSPATIAL / EXECUTIVE			Copy cube	Draw CLOCK (Ten past eleven) (3 points)	POINTS			
 <input type="checkbox"/> [] <input type="checkbox"/> [] <input type="checkbox"/> []								
				<input type="checkbox"/> [] Contour <input type="checkbox"/> [] Numbers <input type="checkbox"/> [] Hands	5/5			
NAMING								
		<input type="checkbox"/> []	<input type="checkbox"/> []	<input type="checkbox"/> []	2/3			
MEMORY		Read list of words, subject must repeat them. Do 2 trials. Do a recall after 5 minutes.		FACE VELVET CHURCH DAISY RED	No points			
		1st trial		<input checked="" type="checkbox"/> ✓ <input checked="" type="checkbox"/> ✓ <input checked="" type="checkbox"/> ✓ <input checked="" type="checkbox"/> ✓				
		2nd trial		<input checked="" type="checkbox"/> ✓ <input checked="" type="checkbox"/> ✓ <input checked="" type="checkbox"/> ✓ <input checked="" type="checkbox"/> ✓				
ATTENTION		Read list of digits (1 digit/sec.). Subject has to repeat them in the forward order		<input checked="" type="checkbox"/> ✓ 2 1 8 5 4				
		Subject has to repeat them in the backward order		<input checked="" type="checkbox"/> ✓ 7 4 2	2/2			
Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors		<input type="checkbox"/> [] FBACMNAAJJKLBAFAKDEAAAJAMOFAAB						
Serial 7 subtraction starting at 100		<input checked="" type="checkbox"/> ✓ 93	<input checked="" type="checkbox"/> ✓ 86	<input checked="" type="checkbox"/> ✓ 79	<input checked="" type="checkbox"/> ✓ 72	<input checked="" type="checkbox"/> ✓ 65		
		4 or 5 correct subtractions: 3 pts, 2 or 3 correct: 2 pts, 1 correct: 1 pt, 0 correct: 0 pt				3/3		
LANGUAGE		Repeat: I only know that John is the one to help today. <input checked="" type="checkbox"/> The cat always hid under the couch when dogs were in the room. <input checked="" type="checkbox"/>				2/2		
Fluency / Name maximum number of words in one minute that begin with the letter F		<input type="checkbox"/> [] _____ (N ≥ 11 words)				1/1		
ABSTRACTION		Similarity between e.g. banana - orange = fruit <input checked="" type="checkbox"/> train - bicycle <input checked="" type="checkbox"/> watch - ruler				2/2		
DELAYED RECALL		Has to recall words WITH NO CUE	FACE <input type="checkbox"/> []	VELVET <input checked="" type="checkbox"/> []	CHURCH <input checked="" type="checkbox"/> []	DAISY <input type="checkbox"/> [] RED <input type="checkbox"/> []	Points for UNCUED recall only	2/5
Optional		Category cue						
		Multiple choice cue						
ORIENTATION		<input checked="" type="checkbox"/> Date	<input checked="" type="checkbox"/> Month	<input checked="" type="checkbox"/> Year	<input checked="" type="checkbox"/> Day	<input checked="" type="checkbox"/> Place	<input checked="" type="checkbox"/> City	6/6
© Z.Nasreddine MD Version 7.0		www.mocatest.org		Normal ≥ 26/30		TOTAL <input checked="" type="checkbox"/> 26	130	
Administered by:		Add 1 point if ≤ 12 yr edu						

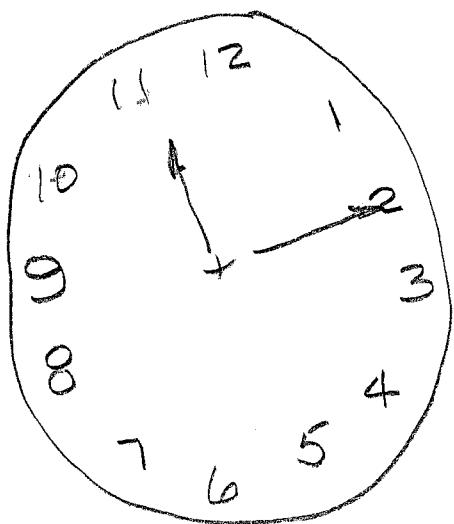


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Copy
cube

[\]

Draw CLOCK (Ten past eleven)
(3 points)

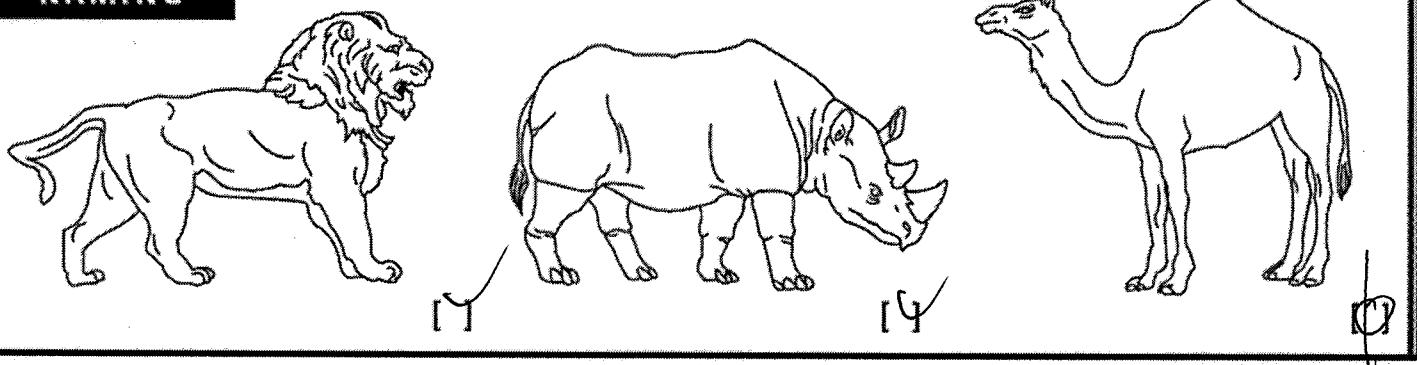


[✓]
Contour

[✓]
Numbers

[✓]
Hands

NAMING



PARKINSON'S DISEASE COGNITIVE RATING SCALE: PD-CRS

<u>1: Immediate Free Recall Verbal Memory</u>				<u>2. Confrontation Naming</u>	
Ask the subject to read aloud the 12 words on the consecutive cards (see book) then recall as many words as possible. Perform three consecutive trials. Score 1 point for each word recalled. <u>The highest number of words recalled in any one trial is the score.</u>				Ask the subject to name the drawings on 20 consecutive cards (see book). There is no time limit for response and only one trial is given. No semantic or phonemic cues are provided. When objects are included in their context (bib, buckle, mane, hook, jingle bell and hoof), the examiner is allowed to indicate the part of the drawing to be named.	
LIGHT	1	1	1	BIB	1
SILK				CANDLE	1
SAND				CHERRY	1
EYELASH			1	STOOL	1
RICE			1	ANCHOR	1
TIE	1			TURTLE	1
BLACKBOARD			1	KITE	1
BICYCLE	1	1		FISHBOWL/AQUARIUM	1
STAR	1	1		BULB	1
LION	1	1		GUITAR	1
RING			1	BUCKLE	1
FRAGRANCE	1	1	1	MANE	1
Total Recalled				HOOK	1
Overall Score	9 / 12		SCREWDRIVER		1
			SCREEN/ROOM DIVIDER		1
			SAFETY PIN		1
			(SMALL) BELL		1
			HOOF		1
			EXTINGUISHER		1
			DOOR BOLT/LATCH		1

20 / 20

3. Sustained Attention

An ascending series of letters and numbers are read to the subject. The subject is asked to report the number of letters in the sequence. Score 1 point for each correct series.

	Series	Correct answer	Points (1, 0)
Example	2 L T 8 A 9	2 letters 1 letter	Example
1	2 P 6 5 4	1 letter 1	1
	3 A 6 K L	3 letters 3	1
2	B 9 0 4 L T	3 letters 3	1
	3 C P 5 7 3	2 letters 2	1
3	3 9 5 L 4 Z A	3 letters 3	1
	I 1 A S Q 4 1	4 letters 3	0
4	7 5 D A 4 T B 2	4 letters 4	1
	9 6 8 4 3 7 L C	2 letters 2	1
5	Z 4 9 A T D 3 8 4	4 letters 4	1
	9 5 M D 4 S C 3 E	5 letters 5	1
			9 /10

4. Working Memory

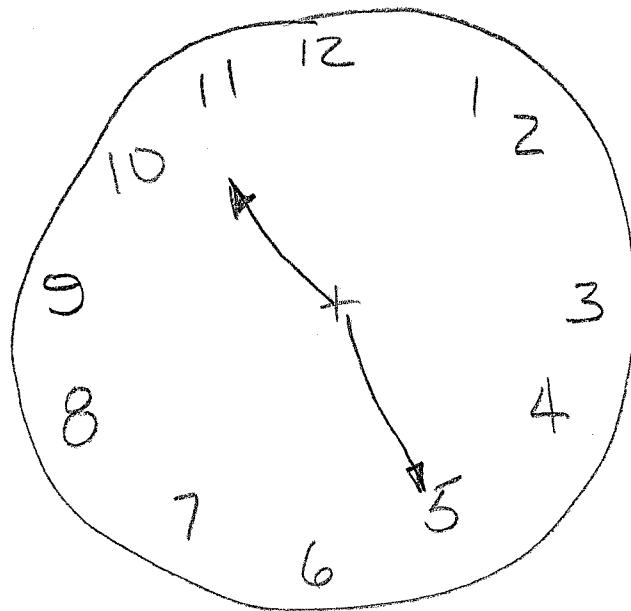
Read aloud a randomized list of numbers and letters ranging in length from 2-6. After each series the subject is asked to repeat the *numbers first*, and *then the letters*. Score 1 point for each correct series. Discontinue after two consecutive scores of 0.

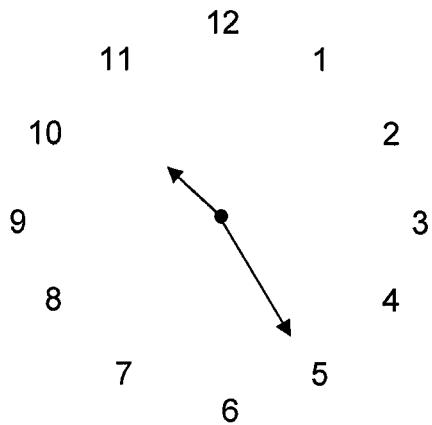
	Series	Correct Answer	Points (1,0)
Example	L 2 T	2 L T	
	8 A 9	8 9 A	
1	M 3	3 M	1
	7 P	7 P	1
2	G 8 M	8 G M	1
	9 I 6	9 6 I	0
3	T 0 4 A	0 4 T A	1
	7 V 6 J	7 6 V J	1
4	M 6 4 N I	6 4 M N I	1
	3 5 S G C	3 5 S G C	0
5	1 R 9 V B 3	1 9 3 R V B	1
	M 2 7 4 Z 9	2 7 4 9 M Z	0

7 /10

5. Unprompted Drawing of a Clock

Ask subject to draw a clock face on a blank sheet of paper and set the hands to "twenty-five minutes past ten". Scored 0-10 points, see table below.



5. Copy Drawing of a clockPlease Copy Here*OK*

	Unprompted		Copy	
	Yes	No	Yes	No
Clock Scoring Table				
The figure looks like a clock.	/			
The clock is not divided by lines or sectors.	/			
There is a symmetric disposition of numbers.	/			
Only 1 to 12 numbers are drawn.	/			
Hour numbers are correctly sequenced.	/			
Only two hands are drawn.	/			
Clock hands are represented as arrows.	/			
Hour hand is shorter than minute hand.	/			
No words have been written.	/			
The number '25' has not been drawn.				

10 / 10 10 / 10

OK

7. Delayed Free Recall Verbal Memory

Ask the subject to recall as many words as possible from the list presented at the beginning.

Words	Points (1,0)	
LIGHT	/	
SILK		
SAND		
EYELASH		
RICE	/	
TIE	/	
BLACKBOARD	/	
BICYCLE	/	
STAR		
LION	/	
RING		
FRAGRANCE	/	7 / 12

8. Alternating Verbal Fluency

The subject is asked to alternately list as many words as possible, alternating between words beginning with the letter "S" and **articles of clothing**, during a **60 second** time period. The articles of clothing may start with the letter "S", but are not limited to any one letter of the alphabet. *Do not use proper nouns or repeat the same word with a different ending*, e.g., swim, swimming, swimsuit. Score 1 point for each alternating pair. (0-20)

List word pairs below

see	coat
say	glove
said	Shoe
south	sock
sea	brief
she	undershirt

List words below

walk
run
jump
swing
turn
kneel
stretch
bend
twist
turn
face
lay
rise
hear
See

Total (max 20pts):

6

Total (max 30pts):

15

PD-CRS SCORES

ITEM	POINTS
1. Immediate Free Recall Verbal Memory (0-12)	9
2. Confrontation Naming (0-20)	20
3. Sustained Attention (0-10)	9
4. Working Memory (0-10)	7
5. Unprompted Drawing of a Clock (0-10)	10
6. Copy Drawing of a Clock (0-10)	10
7. Delayed Free Recall Verbal Memory (0-12)	7
8. Alternating Verbal Fluency (0-20)	6
9. Action Verbal Fluency (0-30)	15
Subcortical Score (0-104)	
Cortical Score (0-30)	
Total Score (0-134)	93

D-KEFS / STROOP (SCORING FORM)

I Time: 122.1 sec .82 fraction sec (Total: _____ seconds) Errors: _____

blue green yellow green red yellow green yellow blue yellow ✓
green red blue yellow blue green yellow blue green red ✓
yellow red green red yellow blue green red blue green ✓
green yellow blue yellow green red blue red yellow red ✓
blue red yellow green blue green yellow blue red yellow ✓
red yellow blue green yellow red yellow green red yellow ✓
blue red green blue red yellow blue green yellow red ✓
yellow green blue yellow blue green red blue green red ✓
red blue red blue green blue yellow green yellow red ✓
green red blue green blue red yellow blue red green

I Time: 135.8 sec = 95.8 fraction sec (Total: _____ seconds) Errors: _____

green red yellow green red blue yellow blue red yellow ✓
yellow red blue red blue green yellow blue green red ✓
blue yellow green blue red yellow green red red yellow ✓
yellow green yellow green blue red blue red green red ✓
blue red yellow red yellow red green yellow blue blue ✓
blue yellow blue green green blue red green yellow yellow ✓
green red yellow green yellow blue red blue blue yellow ✓
yellow green blue yellow blue yellow green blue green red ✓
green blue red green green red yellow green yellow red ✓
yellow red blue green blue green red blue red green

III Time: 3 min 22.0 sec fraction sec (Total: _____ seconds) Errors: _____

yellow green green red blue yellow red blue red blue ✓
yellow green blue green yellow yellow blue blue red yellow ✓
red red yellow blue red red green blue blue green —
yellow red green red blue green yellow green blue red ✓
red green yellow blue red blue green yellow red blue ✓
green yellow blue yellow blue red red green blue yellow ✓
red yellow red blue yellow blue yellow blue yellow green ✓
blue yellow yellow blue green yellow red green red yellow ✓
green blue yellow red yellow blue green blue red red —
yellow red yellow green green yellow red green blue green

IV Time: 1 min 90.8 sec fraction sec (Total: _____ seconds Errors: _____)

yellow red blue green blue blue yellow blue green —
blue blue green blue yellow red yellow green red yellow —
green yellow blue red red blue yellow green red ✓
blue green red yellow green blue red yellow blue green —
blue green yellow blue yellow blue red green red blue ✓
blue yellow red red green red yellow green blue green ✓
green blue blue yellow green yellow red yellow yellow green ✓
green red yellow blue yellow blue red red red yellow ✓
red yellow red green blue yellow green yellow yellow red ✓
green yellow red red blue blue yellow red green green

30 ITEM BOSTON NAMING TEST

1	HELICOPTER	
2	OCTOPUS	
3	MASK	
4	PRETZEL	
5	VOLCANO	
6	SEAHORSE	X
7	WREATH	
8	HARMONICA	
9	RHINO	
10	ACORN	
11	IGLOO	
12	STILTS	
13	DOMINOS	
14	ESCALATOR	
15	HAMMOCK	
16	KNOCKER	
17	PELICAN	
18	PYRAMID	
19	MUZZLE	
20	NOOSE	
21	ASPARAGUS	
22	COMPASS	
23	LATCH	X
24	TRIPOD	
25	SCROLL	
26	TONGS	X
27	SPHINX	
28	TRELLIS	
29	PALETTE	
30	ABACUS	

Total: 27 / 30

MC
CHONI PAT 01

α4β2 nAChRs and cognition in Parkinson's disease

INITIALS
*Ch***CLINICAL DEMENTIA RATING**

	None (0)	Questionable (0.5)	Mild (1)	Moderate (2)	Severe (3)
Memory	No memory loss or slight inconsistent forgetfulness	Consistent slight forgetfulness; partial recollection of events; "benign" forgetfulness	Moderate memory loss; more marked for recent events; deficit interferes with everyday activities	Severe memory loss; only highly learned material retained; new material rapidly lost	Severe memory loss; only fragments remain
Orientation	Fully oriented	Fully oriented except for slight difficulty with time relationships	Moderate difficulty with time relationships; oriented for place at examination; may have geographic disorientation elsewhere	Severe difficulty with time relationships; usually disoriented to time, often to place	Oriented to person only
Judgment & Problem Solving	Solves everyday problems & handles business & financial affairs well; judgment good in relation to past performance	Slight impairment in solving problems, similarities, and differences	Moderate difficulty in handling problems, similarities, and differences; social judgment usually maintained	Severely impaired in handling problems, similarities, and differences; social judgment usually impaired	Unable to make judgments or solve problems
Community Affairs	Independent function at usual level in job, shopping, volunteer and social groups	Slight impairment in these activities	Unable to function independently at these activities although may still be engaged in some; appears normal to casual inspection	No pretense of independent function outside home.	No pretense of independent function outside home
Home Hobbies	Life at home, hobbies, and intellectual interests well maintained	Life at home, hobbies, and intellectual interests slightly impaired	Mild but definite impairment of function at home; more difficult chores abandoned; more complicated hobbies and interests abandoned	Appears well enough to take to functions outside a family home	Appears too ill to be taken to functions outside a family home
Personal Care	Fully capable of self-care		Needs prompting	Requires assistance in dressing, hygiene, keeping of personal effects	Requires much help with personal care; frequent incontinence

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