

(DOCUMENT AND INCLUDE WITH WORKBOOK IF NECESSARY)

THIS PARTICIPANT WAS ENROLLED IN MORE  
THAN ONE STUDY.

PLEASE CHECK

CHONI NC 04

FOR COMPREHENSIVE INFORMATION and/or  
ADDITIONAL STUDY MATERIALS.

## ACH WORKBOOK

 Cholinergic PET imaging of Parkinson's disease and related disorders (HUM00074768)

- # 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.
- 
- 

## INFORMED CONSENT

→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. Christine Munderovic
3. \_\_\_\_\_
4. \_\_\_\_\_

The following elements of the study were discussed in more detail (check all that apply)

- Clinical testing procedures
- Imaging
- General or radiation safety
- Confidentiality
- Time commitment
- Other: \_\_\_\_\_

The research participant communicated understanding of: (check all that apply)

- Main tasks to be completed
- Number of visits
- One or more potential risks of participation

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

Time 10:00 am

Christine Munderovic Signature

**Inclusion/Exclusion Criteria PD**

<b>INCLUSION FOR (circle)</b>	<b>PD</b>	<b>PSP</b>	<b>SCA3</b>	<b>NC</b>
YES / NO	Age 40 and above, Male or Female			
YES / NO / NA	PD diagnosis established according to the UK Parkinson's Disease Society Brain Bank Research Center (UKPDSBRC) clinical diagnostic criteria for PD.			
YES / NO / NA	PD subjects at risk for dementia			
YES / NO / NA	Absence of dementia confirmed by clinical and detailed neuropsychological assessment			
YES / NO / NA	PSP subjects according to NINDS criteria			
YES / NO / NA	SCA3 subjects as defined by the specific genotype of genotype confirmed family history			
YES / NO / NA	Age-matched normal controls			
<b>EXCLUSION</b>				
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 anticholinergic (Trihexyphenidyl/Artane, Benztropine/Cogentin) or neuroleptic drugs at baseline			
YES / NO	Evidence of atypical parkinsonism other than PSP or SCA, 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 use of nicotine drugs such as nicotine patches or varenicline			

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## MOTOR TEST BATTERY

Peg OFF	RT HAND	LT HAND
2 ROWS	35.1	45.6
5 ROWS	85.9	121

## FOOTAPPING

- Right Foot—2 trials
- Left Foot—2 trials
- Alternate foot tapping
- Alternate Foot tapping with Cog task
- Parallel Foot Tapping

FINGER TAPPER "OFF"	RIGHT HAND	LEFT HAND
1	16	43
2	20	43
3	24	40
4	26	38
5	40	38
6	44	
7	44	
8	45	
9	45	
10		
MEAN	43.6	40.4

Start number 60

## BALANCE, TREM, RXN

Trials 57, 54, 51 (3)Errors 0

## BIOTHERSIOMETER

	Right Ankle	Left Ankle
Trial 1	25	15
Trial 2	19	15
Trial 3	15	12
Mean	19.6	14.0

<input checked="" type="checkbox"/>	Sensory Organization Test						
<input checked="" type="checkbox"/>	Motor Control Test						
<input type="checkbox"/>	Tremorometer						
<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"/>
iTUG preferred turning direction <u>RIGHT</u> LEFT							
<input checked="" type="checkbox"/> Mini-BESTest Sensor test							

 GaitRite Assessment 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"/>								

## VISUAL ASSESSMENT

TONOMETER RT 17.0 LT 16.2  
 ISHIHARA (see next page) 17/17

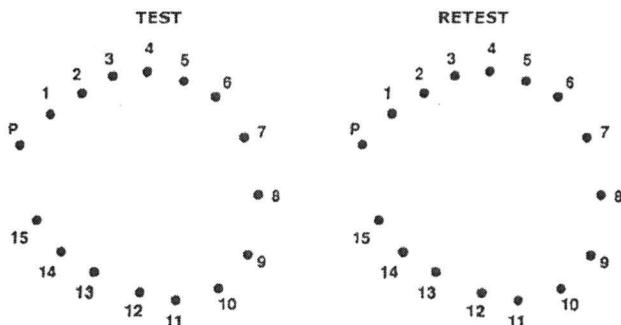
OPTOVUE

LT eye testing  
suboptimal  
lid drop

## FARNSWORTH – D15

Subject's  
Test Order: \_\_\_\_\_  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Subject's  
Retest: \_\_\_\_\_



ANALYSIS	
PROTAN (Red: blue-green)	NORMAL
DEUTAN (Green: red-purple)	
TRITAN (Violet: greenish-yellow)	

MUNSELL 100 TES (total error score) 140

RABIN CONTRAST: Log CS Score 0.60

STEREO BUTTERFLY:  Correct Identification

Identification of generic 3-D object

STEREO FLY:  Correct Identification

Identification of 3-D wings after prompting

STEREO CIRCLES: 7/9

STEREO ANIMALS: 3/3  CAT  RABBIT  MONKEY

RT 20/20 20/30 LT

## ISHIHARA TEST

Plate #	Normal Person	Red/Green Deficiencies		Total Color Blindness
1	12	12		12
2	8	3		X
3	6	5		X
4	29	70		X
5	57	35		X
6	5	2		X
7	3	5		X
8	15	17		X
9	74	21		X
10	2	X		X
11	6	X		X
12	97	X		X
13	45	X		X
14	5	X		X
15	7	X		X
16	16	X		X
17	73	X		X
18	X	5		X
19	X	2		X
20	X	45		X
21	X	73		X
		Protan	Deutan	
		Strong	Mild	Strong Mild
22	26	6	(2)6	2 2(6)
23	42	2	(4)2	4 4(2)
24	35	5	(3)5	3 3(5)
25	96	6	(9)6	9 9(6)

\*numbers in () show they can be read but they are comparatively unclear.

\*\*use plates 26-28 if numbers cannot be read. Winding lines between the two X's are traced with finger.

Plates 1-17: 17 / 17  $\geq 14$  correct: Normal  $\leq 13$  Correct: Administer 18-21.

Plates 18-21: \_\_\_\_\_ / 4

22: \_\_\_\_\_  23: \_\_\_\_\_  24: \_\_\_\_\_  25: \_\_\_\_\_

Protan S/M

Deutan S/M

## OLFACTORY ASSESSMENT

 Hx allergies/sinusitis Stuffy nose today Current Smoker Hx Smoking

### Sensonics

Smell Recognition (UPSIDT)

Score 32 /40 = 80 %

### Sniffin' Sticks (see pages in back for complete data)

Smell Threshold 5.5Smell Discrimination 11 /16Smell Identification 11 /16

### Acoustic Rhinometer

Side	Right	Left
Trial 1 Volume	4.15	4.54
Trial 2 Volume	3.96	4.44
Trial 3 Volume	4.03	4.46
Average Volume	4.04	4.48

### Sniff Magnitude Test

Canister 1 ratio: 1.00 Canister 2 ratio: 0.91 Canister 3 ratio: 0.79 Canister 4 ratio: 0.88DNA CONSENT OBTAINED: YES / NOSALIVA OBTAINED: YES / NO / NA / ALT CODE? \_\_\_\_\_ BLOOD OBTAINED: YES / NO / NA / ALT CODE? \_\_\_\_\_

## Neuropsychological Assessment

<input checked="" type="checkbox"/> Montreal Cognitive Assessment (MoCA)
<input checked="" type="checkbox"/> MMSE
<input checked="" type="checkbox"/> Parkinson's Disease – Cognitive Rating Scale (PD-CRS)
<input checked="" type="checkbox"/> Mattis Dementia Rating Scale (MDRS)
<input checked="" type="checkbox"/> WAIS-III subtest Digit Symbol
<input checked="" type="checkbox"/> WAIS-III subtest Matrix Reasoning
<input checked="" type="checkbox"/> WAIS-III subtest Information
<input checked="" type="checkbox"/> WAIS-III subtest Digit Span (forward & backward)
<input checked="" type="checkbox"/> D-KEFS subtest Verbal Fluency Test (initial letter fluency F, A and S; Animal Naming)
<input checked="" type="checkbox"/> D-KEFS subtest Sorting Test
<input checked="" type="checkbox"/> D-KEFS Color Word Interference Test (STROOP)
<input checked="" type="checkbox"/> D-KEFS subtest Trail Making Test
<input checked="" type="checkbox"/> California Verbal Learning Test -II (CVLT)
<input checked="" type="checkbox"/> Benton Judgment of Line Orientation
<input checked="" type="checkbox"/> WMS-III, Visual Reproduction
<input checked="" type="checkbox"/> Boston Naming Test (30 Item)
<input checked="" type="checkbox"/> Clinical Dementia Rating

## Neuropsychiatric Assessment

<input checked="" type="checkbox"/> Geriatric Depression Scale (GDS)
<input checked="" type="checkbox"/> Spielberger Trait Anxiety Inventory
<input checked="" type="checkbox"/> Modified Marin Apathy Evaluation Scale
<input checked="" type="checkbox"/> General Feelings Questionnaire (GFQ)
<input checked="" type="checkbox"/> PDQ-39
<input checked="" type="checkbox"/> MAYO Sleep Questionnaire
<input checked="" type="checkbox"/> Rhinorrhea Questionnaire
<input checked="" type="checkbox"/> Brief Psychiatric Rating Scale (BPRS)
<input checked="" type="checkbox"/> Neuropsychiatric Inventory (NPI)
<input checked="" type="checkbox"/> Parkinson's Disease- Cognitive Functional Rating Scale (PD-CFRS)
<input checked="" type="checkbox"/> Instrumental Activities of Daily Life & Physical Self-Maintenance Scale (IADL-PSMS)
<input checked="" type="checkbox"/> MDS-UPDRS non-motor (I,II, & IV)

**General Feelings Questionnaire** © N. Bohnen, MD

Circle the following that may apply to you:

0=Almost Never; 1=Sometimes; 2=Often; 3=Very Often

A	0 1 2 <u>3</u>	It makes me upset to see people disobey the law.
B	0 1 2 <u>3</u>	I am an easygoing and laid back person.
C	0 <u>1</u> 2 3	It is difficult for me to do two things at the same time.
D	<u>0</u> 1 2 3	I like to play the lottery.
E	0 <u>1</u> 2 3	I act on impulse.
F	0 1 <u>2</u> 3	I find it important to know every detail so that I can make the right decision.
G	0 <u>1</u> 2 3	I prefer that people leave me alone and do not bother me.
H	<u>0</u> 1 2 3	I think that others are playing tricks on me.
I	<u>0</u> 1 2 3	Sometimes those close to me are not honest with me.
J	0 <u>1</u> 2 3	I need a careful and detailed plan before acting.
K	<u>0</u> 1 2 3	I believe something bad is going to happen to me.
L	<u>0</u> 1 2 3	I tend to keep at something for so long that others can become irritated with me.
M	<u>0</u> 1 2 3	I am losing initiative
N	<u>0</u> 1 2 3	I feel nervous when I make eye contact with others.
O	<u>0</u> 1 2 3	I get so focused on a thought that I cannot get off of it.

Continue on next page

Circle the Following that may apply to you:

0=Almost Never; 1=Sometimes; 2=Often; 3=Very Often

P	<input checked="" type="radio"/> 1 2 3	I need to know all of the details before acting.
Q	<input checked="" type="radio"/> 0 1 2 3	I am uneasy in new surroundings.
R	<input checked="" type="radio"/> 0 1 2 3	I have difficulty ending conversations even when I have nothing to say.
S	<input checked="" type="radio"/> 0 1 2 3	I am overly careful and precise.
T	<input checked="" type="radio"/> 0 1 2 3	A certain line of thought stays on my mind for days at a time.
U	<input checked="" type="radio"/> 0 1 2 3	I easily become irritated when I am interrupted while doing things.
V	0 1 2 <input checked="" type="radio"/> 3	I am flexible.
W	0 1 <input checked="" type="radio"/> 2 3	I say things too quickly without thinking.
X	<input checked="" type="radio"/> 0 1 2 3	I check and re-check things carefully.
Y	<input checked="" type="radio"/> 0 1 2 3	Others find me less interesting.
Z	0 1 2 <input checked="" type="radio"/> 3	I make up my mind quickly.
AA	0 1 2 <input checked="" type="radio"/> 3	I am an outgoing and spontaneous person.

**Rhinorrhea Questionnaire**

1. Do you have a decreased sense of smell?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2. Do you frequently have a runny nose?	<input type="checkbox"/> Yes...if yes, continue <input checked="" type="checkbox"/> No...if no, stop here
3. Is it related to allergies?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. Is it related to sinus problems?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5. Is it related to frequent colds?	<input type="checkbox"/> Yes <input type="checkbox"/> No
6. If the answers for 3-5 are no, did it start before or after your Parkinson symptoms?	<input type="checkbox"/> Before <input type="checkbox"/> After <input type="checkbox"/> N.A. (if you do not have Parkinson's)
7. Does your runny nose worsen with eating?	<input type="checkbox"/> Yes <input type="checkbox"/> No

**NEUROPSYCHOLOGICAL TESTING**

error CM

<b>Education</b>	<del>F</del> 14		
<b>Age</b>	67		
<b>Gender</b>	F		
<b>Hand Dom</b>	RT		
<b>MOCA</b>	26	MMSE	28
<b>Color Blind</b>	Y / N		
<b>Boston</b>	28 / 30		
<b>JOLO</b>	22 / 30		
<b>Smell</b>	32 / 40      30 %		

WAIS-III	<b>Subtest</b>	<b>Raw</b>	<b>Scaled</b>
	Digit Symbol (coding):	61	11
	Matrix Reasoning :	18	14
	Digit FW:	9	-
	Digit BW:	6	-
	Digit Total:	15	-
	Information:	24	14

CVLT-II	<b>Subtest</b>	<b>Raw</b>	<b>Scaled</b>
	CVLT-1:	8	1.0
	CVLT-2:	12	1.0
	CVLT-3:	14	1.5
	CVLT-4:	11	0.0
	CVLT-5:	14	1.0
	CVLT-STM:	14	1.5
	CVLT-LTM:	15	1.5
	RECOGNITION:	16	0.5

<b>REACTION TIME TEST</b>	<b>RXN R/L</b>	309	SD	47
	<b>CHOICE</b>	616	SD	124
	<b>CONDITIONAL</b>	2245	SD	756

D-KEFS		Raw	Scaled
	STROOP-I:	47.2	
	STROOP-II:	64.7	
	STROOP-III:	126.3	
	STROOP-IV:	123.4	

	Subtest	Raw	Scaled
	SORTING-1:	16	
	SORTING-2:	20	
	RECOGN-1:	16	
	RECOGN-2:	16	

F	A	S	ANIMALS
14	13	18	22
FAS TOTAL	FAS SCALED	13	

TRAIL MAKING TEST	TMT 1	19.3	
	TMT 2	27.3	
	TMT 3	37.9	
	TMT 4	98.7	
	TMT 5	21.2	

WMS III	Design A	10	
	Design B	8	TOTAL 75
	Design C	18	
	Design D	31	SCALED 11
	Design E	8	

DRS	RAW	AMSS	PERCENT
	ATT 36	11	60-71
	I/P 37	11	60-71
	CONST 6	10	41-59
	CONCEPT 31	10	41-59
	MEMORY 24	10	41-59
	TOTAL RAW 140	T.AMSS: 11 AEMSS: 11	60-71

**MMSE**

~~5.0 mm~~  
5.5

**SNIFFIN' STICKS ODOR THRESHOLD**

DILUTION							
1							
2							
3							
4							
5	++	++	++	++	++		
6	/	+0	0	+0	0		
7	0						
8	-						
9	+0						
0	-						
11	0						
12	-						
13	+0						
14	-						
15	0						
16	-						

**SNIFFIN' STICKS ODOR DISCRIMINATION**

Mark each box with    R (red)    G (green)    B (Blue)

1	R	
2	G	C
3	G	C
4	G	C
5	G	C
6	G	C
7	G	C
8	G	C
9	G	C
0	B	
11	R	
12	B	
13	G	C
14	R	
15	G	C
16	G	C

$$\frac{11}{16}$$

## SNIFFIN' STICKS ODOR IDENTIFICATION

1 ✓	ORANGE	BLACKBERRY	STRAWBERRY	PINEAPPLE
2 ✓	SMOKE	GLUE	LEATHER	GRASS
3 ✗	HONEY	VANILLA	CHOCOLATE	CINNAMON
4 ✓	CHIVE	PEPPERMINT	FIR	ONION
5 ✓	COCONUT	BANANA	WALNUT	CHERRY
6 ✓	PEACH	APPLE	LEMON	GRAPEFRUIT
7 ✗	LIQUORICE	CHERRY	SPEARMINT	COOKIES
8 ✗	MUSTARD	GUM	MENTHOL	TURPENTINE
9 ✓	ONION	SAUERKRAUT	GARLIC	CARROTS
10 ✓	CIGARETTES	COFFEE	WINE	SMOKE
11 ✗	MELON	PEACH	ORANGE	APPLE
12 ✓	CLOVES	PEPPERMINT	CINNAMON	MUSTARD
13 ✓	<i>Changed key PEAR pt</i>	PLUM	PEACH	PINEAPPLE
14 ✓	CAMOMILLE	RASPBERRY	ROSE	CHERRY
15 ✗	ANISE	RUM	HONEY	FIR
16 ✓	BREAD	FISH	CHEESE	HAM

11  
—  
16

Patient ID 803  
 Record ID 474  
 Chris Move - Both Sides  
 Units milli-g  
 Test Date 4/21/2014  
 Test Time 9:21 AM  
 TremorLab Rev 3.2.2  
 TremorScope S/N 20121  
 TremorScope Rev 1.23  
 Samples 765  
 Sample Rate [Hz] 38.18

ACH-NC01\_trem.rec

Right Axis	Freq Mean	Freq Spread	Tremor Ampl	Time Pcnt	Trem Score	Peak Freq
Up/Down	5.95	2.33	2.18	98	100	1.29 7.91
Right/Left	5.24	2.46	1.56	96	100	0.82 2.52
Front/Back	4.27	2.48	1.32	97	100	0.56 1.86
Composite	7.44	4.07	2.71	98	100	2.02 5.95
Average	5.41	2.41	1.69	97	100	0.89 Samples: 765
Right Axis	Freq Mean	Freq Spread	Tremor Ampl	Time Pcnt	Trem Score	Peak Freq
Up/Down	3.42	2.47	2.95	88	100	1.01 2.78
Right/Left	3.98	1.90	1.78	68	100	0.71 4.19
Front/Back	3.15	1.52	1.63	93	100	0.51 2.78
Composite	6.54	3.60	3.56	100	100	2.33 2.02
Average	3.53	2.03	2.12	82	100	0.74 Samples: 765
Right Axis	Freq Mean	Freq Spread	Tremor Ampl	Time Pcnt	Trem Score	Peak Freq
Up/Down	5.07	2.71	1.71	99	100	0.87 2.67
Right/Left	4.87	2.54	1.69	99	100	0.83 2.22
Front/Back	4.14	2.47	1.15	98	100	0.48 2.67
Composite	6.30	4.10	2.31	99	100	1.45 2.22
Average	4.80	2.59	1.52	99	100	0.72 Samples: 765
Right Axis	Freq Mean	Freq Spread	Tremor Ampl	Time Pcnt	Trem Score	Peak Freq
Up/Down	5.37	3.04	10.77	99	100	5.78 3.98
Right/Left	4.01	2.53	24.28	99	100	9.74 1.31
Front/Back	3.96	2.30	13.16	98	100	5.22 0.76
Composite	4.76	2.37	29.63	99	100	14.09 1.36
Average	4.42	2.70	16.07	99	100	6.91 Samples: 765
Left Axis	Freq Mean	Freq Spread	Tremor Ampl	Time Pcnt	Trem Score	Peak Freq
Up/Down	6.04	2.73	2.63	99	100	1.59 5.55
Right/Left	6.04	2.82	1.56	98	100	0.94 6.66
Front/Back	4.71	2.48	1.42	98	100	0.67 0.00
Composite	7.32	3.32	3.31	98	100	2.42 5.55
Average	5.77	2.69	1.87	98	100	1.07 Samples: 765
Left Axis	Freq Mean	Freq Spread	Tremor Ampl	Time Pcnt	Trem Score	Peak Freq
Up/Down	4.34	2.31	1.40	100	100	0.61 2.51
Right/Left	3.96	2.42	1.38	99	100	0.55 1.41
Front/Back	2.32	0.90	0.93	98	100	0.22 0.00
Composite	5.44	3.68	2.12	100	100	1.15 1.81
Average	3.84	2.12	1.24	99	100	0.46 Samples: 765
Left Axis	Freq Mean	Freq Spread	Tremor Ampl	Time Pcnt	Trem Score	Peak Freq
Up/Down	5.90	2.37	2.21	98	100	1.30 6.69

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Right/Left	5.10	2.26	1.44	99	100	0.73	2.62
Front/Back	5.17	2.22	1.59	100	100	0.82	3.98
Composite	6.79	3.10	3.00	99	100	2.03	2.62
Average	5.48	2.29	1.75	99	100	0.95	Samples: 765
Left Axis	Freq Mean	Freq Spread	Tremor Ampl	Ampl Pcnt	Time Pcnt	Trem Score	Peak Freq
Up/Down	4.90	2.26	24.33	100	100	11.92	2.00
Right/Left	3.13	3.23	65.87	98	100	20.60	0.65
Front/Back	3.23	2.82	49.98	87	100	16.13	0.65
Composite	3.58	2.42	78.58	98	100	28.09	2.00
Average	3.66	2.71	46.48	94	100	16.22	Samples: 765

*ACH NC 01*  
**Rabin Contrast Sensitivity Test Instructions and Score Sheet**

- Administer the test with the best optical correction at a distance of 4 meters (13.1 feet).
- The room lights should be OFF and the illuminator box ON.
- Occlude one eye; instruct your patient to begin on row 1, and read each letter aloud, continuing, row-by-row, down the chart.
- Encourage your patient to guess when unsure; allow up to five seconds per letter.
- If your patient is able to read at least one letter on a row, then ask your patient to attempt to read every letter on that row.
- Cross-out letters read incorrectly (including an entire row if unable to read any letters from that row).
- Count the total letters missed; determine the log CS score from the table at the right.
- Repeat the procedure for the fellow eye; ask your patient to read the letters from right to left to minimize learning effects.

Score Sheet  
 Cross-out letters read  
 incorrectly and letters not seen

Row	log CS
1	Z R K D C      0.25
2	D N C H V      0.50
3	C D H N R      0.75
4	R V Z O S      1.00
5	O S D V Z      1.25
6	N Q Z C D      1.50
7	R D N S K      1.75
8	O K S V Z      2.00

Total letters incorrect	Log CS Score
0	2.00
1	1.95
2	1.90
3	1.85
4	1.80
5	1.75
6	1.70
7	1.65
8	1.60
9	1.55
10	1.50
11	1.45
12	1.40
13	1.35
14	1.30
15	1.25
16	1.20
17	1.15
18	1.10
19	1.05
20	1.00

Total letters incorrect	Log CS Score
21	0.95
22	0.90
23	0.85
24	0.80
25	0.75
26	0.70
27	0.65
28	0.60
29	0.55
30	0.50
31	0.45
32	0.40
33	0.35
34	0.30
35	0.25
36	0.20
37	0.15
38	0.10
39	0.05
40	0.00

*Preliminary Normative Log CS Values*

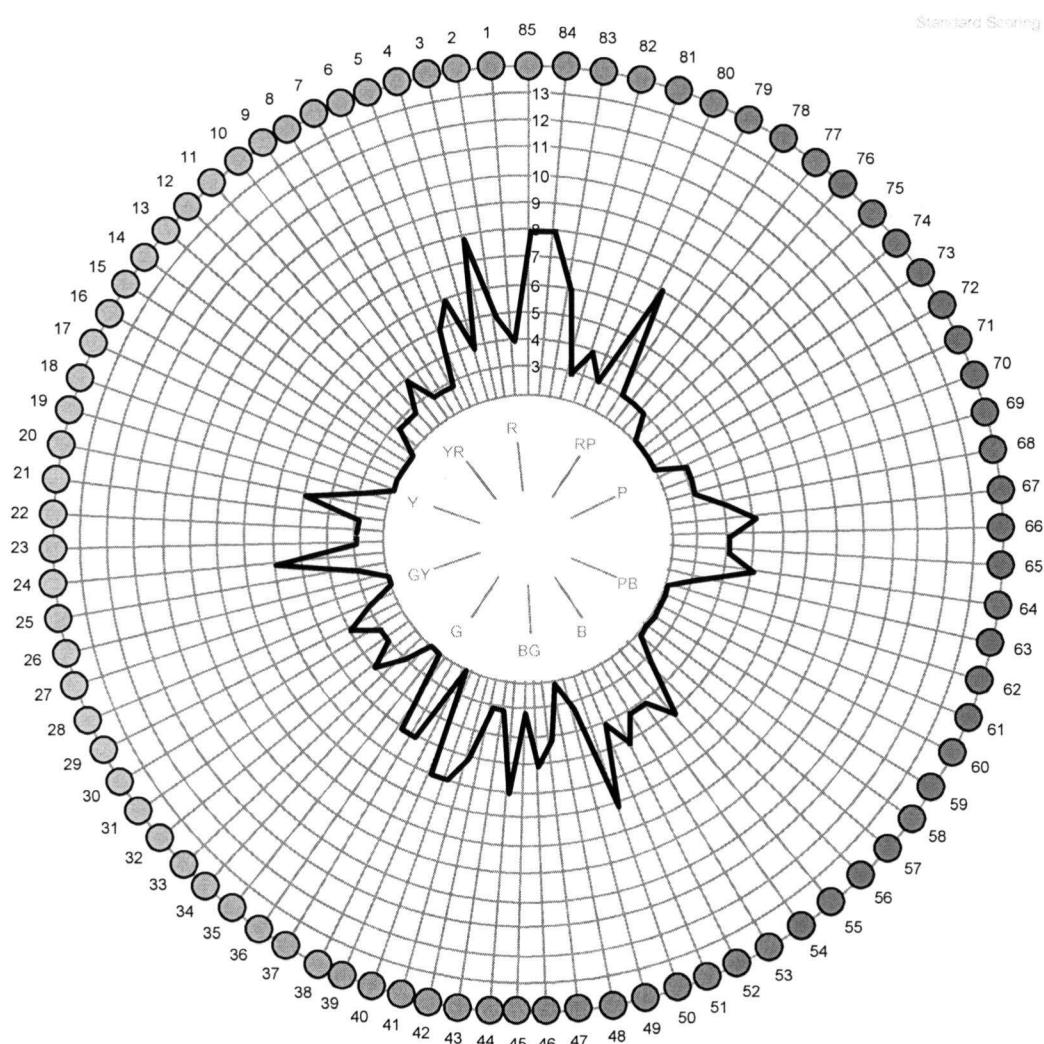
Mean $\pm$ Standard deviation	1.53 $\pm$ 0.11
Below normal	Less than 1.30 log CS (e.g., unable to read letters on rows 6, 7 and 8)
Super-normal	Greater than 1.75 log CS (e.g., able to read letters on row 8)

Log CS values are in *Michelson contrast*, which is not equivalent to *Weber contrast* on the Pelli-Robson chart. Pelli-Robson score equivalents for each row are as follows— Row 1: 0.15; Row 2: 0.30; Row 3: 0.50; Row 4: 0.75; Row 5: 0.95; Row 6: 1.20; Row 7: 1.45; Row 8: 1.70.

ACH NC 01



## Farnsworth-Munsell 100 Hue Test Results



Total Error Score (TES): 140  
Classification: Low Discrimination  
  
Subject: ACH NC 01  
Reference:  
Date of Birth:  
Date of Test: 4/21/2014  
Test Duration: (mins)  
Gender: Unspecified  
Geographic Location: Unspecified  
Industry Type: Unspecified  
Primary Job Function: Unspecified  
Years of Experience: Unspecified  
Illumination Type: D65

Test Serial Number:

Cap Order: 3, 85, 5, 4, 1, 2, 6, 7, 9, 8, 10, 12, 11, 13, 14, 15, 16, 17, 18, 19, 21, 20, 24, 22, 23, 25, 26, 27, 28, 30, 29, 32, 31, 33, 34, 35, 36, 40, 42, 41, 37, 38, 39, 44, 43, 45, 46, 50, 47, 48, 49, 51, 53, 55, 52, 54, 56, 57, 58, 59, 60, 61, 62, 63, 65, 67, 64, 66, 68, 70, 69, 71, 72, 73, 74, 75, 76, 78, 77, 79, 84, 81, 80, 82, 83

FM 100 hue test results not certified (No Serial Number).

Comments: