UPDATED



Kingston Standardized Cognitive Assessment - revised

+ DRIVE SCORE

KSCAr^{+Drive} ASSESSMENT FORM

PATIENT NAME:	RATER:
DATF:	CASF #:

The KSCAr^{+Drive} ADMINISTRATION AND SCORING Manual, should be used in conjunction with this form, and can be downloaded free of charge from: www.kingstonscales.org or email: kscales@queensu.ca
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Name	Age	M F
Date of Birth	Case No	
(day / month / year)		
First Language		
Education:		
Last Occupation		
Patient Status: Inpatient Consultation Outpati	ient Other	
Living Arrangement (If Not Inpatient): Alone With spot	use Age peer	
With younger caregivers Institution		
Present Assessment: Date Time _ (day/month/year)	a.m./p.m.	
(day/month/year)		
Place		
Examiner		
Lateral Dominance: Right Left Mixed Unkno	own	
For This Exam: Was Vision Adequate Yes No		
Was Hearing Adequate Yes No		
Physical Handicaps:		
(Affecting Performance)		
Significant Meds:		

OBSERVATIONS DURING EXAMINATION

(normal response is larger and bolded)

BEHAVIOUR AT TIME OF EXAMINATION

OVERLY PERSISTENT	1	2	3	4	5	GIVES UP EASILY
UNCONCERNED	1	2	3	4	5	ANXIOUS
RELAXED			1	2	3	RESTLESS
FULLY ALERT			1	2	3	DEPRESSED LEVEL
						OF CONSCIOUSNESS
GOOD CONCENTRATION	NC		1	2	3	EASILY DISTRACTED
COOPERATIVE			1	2	3	UNCOOPERATIVE
LANGUAGE USAGE						
ARTICULATION GOOD			1	2	3	ARTICULATION POOR
SPONTANEOUS SPEEC	CH		1	2	3	SPEAKS ONLY WHEN
						SPOKEN TO
FLUENT SPEECH			1	2	3	NON FLUENT SPEECH
NORMAL SPEECH			1	2	3	PERSEVERATIVE SPEECH

SCORING SUMMARY

NAME:								
CASEBOOK No.								
DATE:								
RATER:								
Sub-Test		Sc	cores		Perfo	rmar	nce Con	nments
1. Orientation /10			<u> </u>					
3. a) Digits Forward /5		$\times\!\!\times\!\!\times\!\!\times$						
3. b) Digits Backward /-	^{'4}							
4. Word Recall /10								
5. Visual Memory /6		$\times\!\times\!\times\!\times$						
6. Word Finding /10								
7. Reading /3		$\overline{}$	>>>>	\ggg				
8. Abstract Thinking /8			\ggg					
9. Calculation /4			\ggg					
10. Writing /4		$\overline{}$	>>>>	XXX				
11. R/L Orientation /10	, 💥							
12 Verbal Comprehens	sion /10							
13. Delayed Word Rec	all /10							
14. Word Recognition	/10							
15. Copying /4		×						
16. Spatial Reversal /5		\otimes						
17. Ideomotor /3		\otimes		XXX				
18. Clock Test /7		\otimes		\ggg				
19. Perseveration /2		\bigotimes						
Sub-Totals					Normal Cumula	ative %	Dementia	Cumulative %
Language /39		$\overline{}$	>>>>	\ggg				
Visual-Motor /31				\ggg				
Memory /55								
Total Score /125								
		XXXX			FAIL ≤42	"GRE	Y" 43-45	PASS ≥46
Drive Score /47	·							

RECORD ALL RESPONSES

1. ORIENTATION

"WHAT IS"	Responses and Observations		
1. "YOUR FULL NAME?"		_ 0	1
2. "YOUR AGE?"		_ 0	1
3. "YOUR BIRTH DATE?" _		_ 0	1
4. "WHERE ARE WE NOW?"		0	1
5. "WHAT CITY (TOWN OR V	/ILLAGE) IS THIS?"	0	1
6. "WHAT DAY OF THE WEE	K IS THIS?"	0	1
7. "WHAT MONTH IS THIS?"		_ 0	1
8. "WHAT YEAR IS THIS?"		_ 0	1
	YOUR WATCH" (or THE CLOCK) DAY?"	0	1
10."WHAT IS THE SEASON?)II	0	1
	TOTAL _		/10
2. REMOTE MEMORY (Verif	fy If Possible)		
1. "WHERE WERE YOU BOR	RN?"	0	1
2. "WHERE DID YOU GO TO	SCHOOL?"	_ 0	1
3. "WHAT WAS YOUR FATH	ER'S NAME?"	_ 0	1
4. "WHAT WAS YOUR MOTH	IER'S NAME?"	0	1
5. "HOW MANY BROTHERS	AND SISTERS DID YOU HAVE?"	0	1

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3. DIGIT REPETITION

[1 digit/second, even tone of voice; record responses; administer Trial II only if patient fails Trial I; continue until both are failed]

a) Digits Forward

"I AM GOING TO SAY SOME NUMBERS. LISTEN CAREFULLY, AND WHEN	I AM
THROUGH, SAY THEM RIGHT AFTER ME."	

1.	Trial II: 3-7	0	1
2.	Trial II: 9-4-6	0	1
3.	Trial I: 2-5-8-1	0	1
4.	Trial II: 7-5-9-1-4	0	1
5.	Trial II: 5-3-7-2-8-6	0	1
b) [TOTAL Digits Backward		/5
STO	W I AM GOING TO SAY SOME MORE NUMBERS, BUT THIS TIME WHEN OP I WANT YOU TO SAY THEM BACKWARDS. FOR EXAMPLE, IF I SAY AT WOULD YOU SAY?"		-9,
1.	Trial I: 2-4	0	1
2.	Trial I: 6-9-2	0	1
3.	Trial II: 8-3-7-1	0	1
4.	Trial II: 1-6-2-8-5	0	1

TOTAL _____/4

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4. WORD RECALL

Use 10 word list (TABLE, FOOTBALL, WINDOW ... APPLE).
USE A BLANK SHEET OF PAPER (i.e. page 7) TO COVER THE WORDS THAT YOU HAVE
NOT YET PRESENTED. SLIDE THE PAPER DOWN THE LIST SEQUENTIALLY EXPOSING
THE LIST ONE WORD AT A TIME.

Present each word for 2 seconds. Ask the subject to

"PLEASE READ ALOUD EACH WORD THAT I SHOW YOU."

DO NOT TELL THE SUBJECT TO TRY AND REMEMBER THEM.

After presenting all 10 words, cover the list and ask the subject "PLEASE TELL ME AS MANY OF THE WORDS FROM THAT LIST AS YOU CAN, IN ANY ORDER"

Score = number correct (max = 10).

TABLE ROSE MOON APPLE	 FOOTBALL COMPUTER FORK	 WINDOW GLOVE GOLD		
AFFLL			TOTAL	/10

5. VISUAL MEMORY [3 designs on 3 pages 10, 12, 14]

[Hand patient blank page and pencil with eraser]

"HERE IS A PIECE OF PAPER FOR YOU. I AM GOING TO SHOW YOU A FIGURE. I WOULD LIKE YOU TO STUDY IT FOR 10 SECONDS AND THEN I WILL TAKE IT AWAY AND I WANT YOU TO DRAW IT FROM MEMORY."

[Remove design after 10 secs; mark the top of the page as used by the patient; repeat instructions for each design as you hand patient another blank page]

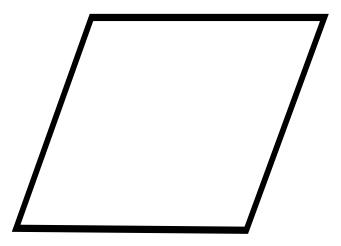
Design 2		0	1	2
Design 3		0	1	2
	TO-	T A I		,

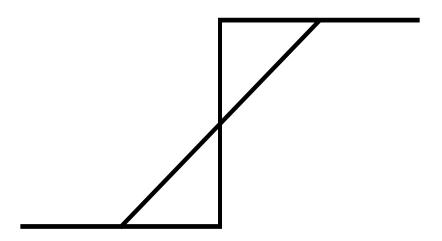
TOTAL /6

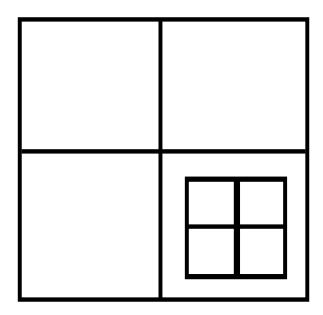
Note: Pages 9, 11, 13, and 20 are blank for subject responses.

USE THIS PAGE TO COVER WORD LIST

TABLE FOOTBALL WINDOW ROSE COMPUTER **GLOVE** MOON FORK **GOLD APPLE**







6. WORD FINDING 12 picture pages (16, 1	6.	WORD FINDING	[2 picture pages (16,	17)	1
--	----	--------------	-----------------------	-----	---

	SC	ORE	If Incorrect, Record Response	
 KITE BICYCLE SPADE (SHOVEL) FOOT BOTTLE UMBRELLA ELEPHANT CHIMNEY 	0 0 0 0 0 0 0 0	1 1 1 1 1 1 1		
9. PEDAL (Use Pic 2) 10. SPOKES (Use Pic 2)		1 1		
		<i>→</i>	TOTAL	_/10

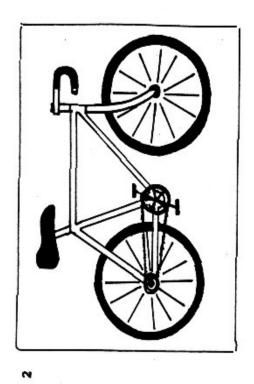
7. READING COMPREHENSION [Story page (18)]

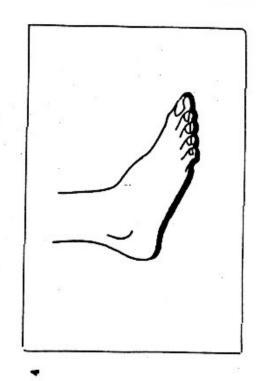
"NOW I WOULD LIKE YOU TO READ A SHORT STORY AND THEN I WILL ASK
YOU SOME QUESTIONS ABOUT IT. PLEASE READ SO THAT I CAN HEAR YOU."

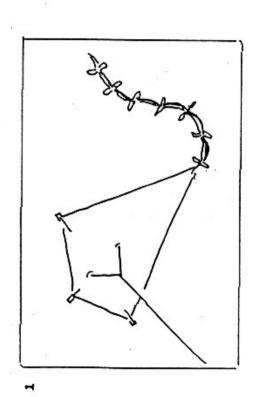
[Hand patient the story page; Patient must have story in their possession when answering questions; Tell patient to refer to text; note articulation!]

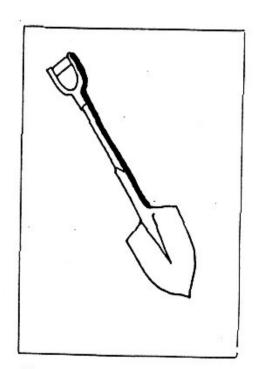
Mr. Davis had to go to Toronto. He decided to go by bus. His daughter drove him to the bus terminal, but on the way there they ran out of gas. However, they arrived at the terminal just in time for him to catch the bus.

[] Unable To Read		
(If patient is unable to read, or does so with great difficulty, proceed to next task.)	
"WHAT CITY WAS MR. DAVIS TRAVELLING TO?"	0	1
"HOW DID HE INTEND TO GET THERE?"	0	1
"WHERE WAS HIS DAUGHTER DRIVING HIM?"	0	1
TOTAL		/3

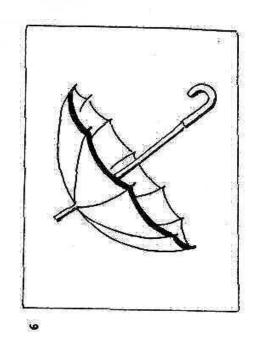


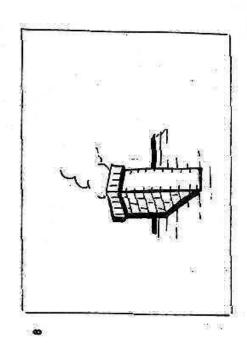


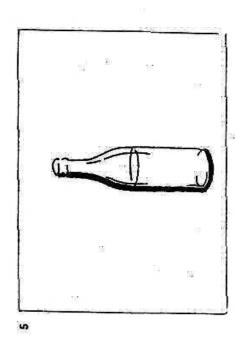


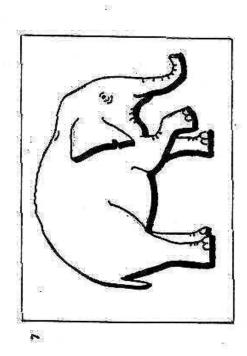


KSCAr^{+Drive}









Mr. Davis had to go to Toronto.

He decided to go by bus.

His daughter drove him to the

bus terminal, but on the

way there they ran out of gas.

However, they arrived at

the terminal just in time for

him to catch the bus.

8. ABSTRACT THINKING

[RECORD ALL RESPONSES]

1. "IN WHAT WAY ARE CARROTS AND BEANS ALIKE?" [If patient fails to give a 2 point answer, say "THEY ARE BOTH VEGET	ABLES	"]			
			0	1	2
2. "IN WHAT WAY ARE A SHIRT AND A SWEATER ALIKE?" [If patient fails to give a 2 point answer, say "THEY ARE BOTH ITEMS	OF CLC	тні	NG"]		
			0	1	2
3. "IN WHAT WAY ARE A DOG AND A COW ALIKE?" [No help]					
			0	1	2
4. "IN WHAT WAY ARE A CAR AND A BICYCLE ALIKE?" [No help]					
			0	1	2
		T	OTAL		/
9. CALCULATION					
"I WANT TO ASK YOU A FEW MORE QUESTIONS: HOW MUCH IS"					
1. 2 PLUS 4 (2 + 4) =			0	1	
2. 9 MINUS 2 (9 - 2) =			0	1	
3. 5 TIMES 5 (5 X 5) =			0	1	
4. 56 DIVIDED BY 7 (56 ÷ 7) =			0	1	
	-	ΤΟΤ	AL	/	4
10. WRITING [Use blank page (20)]					
"NOW I WOULD LIKE YOU TO WRITE SOMETHING "					
a)"FIRST YOUR NAME, PLEASE".		0	1		
b)"AND NOW I WANT YOU TO WRITE: KINGSTON, ONTARIO, CANAL	D A "*				
[Repeat, if patient forgets it]	0 1	2	3		
* use a more familiar local address (of similar length) if the patient is not a Note: Patient must write (i.e. use script) not print. If patients start to print, correct them, if they persist, score is 0.		igsto	n.		
2222, , , , , , , ,	TOT	AL _		/4	

(Use this page for Writing)

11. RIGHT/LEFT ORIENTATION and

12. VERBAL COMPREHENSION

NOTE: while Right/Left Oriethey are scored separately					geth	er as	one t	ask
they are scored separately	as two distilled tas	NS. ASI	t tile patier	it to	R	/ L	Pa	rt
1. "TOUCH YOUR LEFT SI	HOULDER."				0	1	0	1
2. "TOUCH YOUR RIGHT I	ELBOW."		······································		0	1	0	1
3. "TOUCH YOUR RIGHT E	EAR."				0	1	0	1
4. "TOUCH YOUR LEFT HA	AND."				0	1	0	1
5. "TOUCH YOUR RIGHT A	ANKLE."				0	1	0	1
6. "TOUCH YOUR LEFT K	NEE."				0	1	0	1
7. "TOUCH YOUR LEFT TH	HUMB."				0	1	0	1
8. "POINT TO MY LEFT HA	AND."				_ 0	1	0	1
9. "POINT TO MY RIGHT A	ARM."				_ 0	1	0	1
10."POINT TO MY RIGHT I	ELBOW."				_ 0	1	0	1
		TOTA	AL Sub-Tes	st 11		/10)	
		TOTA	AL Sub-Tes	st 12			/	10
13. DELAYED WORD RE	CALL							
"PLEASE TELL ME AS MA THE LIST THAT I SHOWE			_		FRO∣	M		
Score = number correct	(max = 10).							
ROSE	FOOTBALL COMPUTER FORK	- - -	WINDOW GLOVE GOLD	TOTAL		J	10	
				IOIAL		/	IU	

14. WORD RECOGNITION

After completing the recall, show the subject the second list of 20 words [pages 23,24] (TABLE, HOUSE, BOWL, .. BIRD), point to the first word and say to the subject

"DID YOU SEE THIS WORD ON THE LIST THAT I SHOWED TO YOU EARLIER OR IS THIS A NEW WORD?"

Repeat these instructions for the 2nd word. But for the 3rd word say "HOW ABOUT THIS ONE?"

For the 4th word onward, use either instruction as seems necessary.

After completing the lst page go to the second one (GLOVE, KING)

Score = total number of correct responses i.e. IN/10 + NOT IN/10 = Total/20 ÷ 2 (max = 10).

	IN	NOT IN
TABLE		
HOUSE		
BOWL		
FOOTBALL		>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
WINDOW		
LAKE		
ROSE		>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
DRESS		
WHEAT		
COMPUTER		
GLOVE		
KING		
MOON		>>>>>>
CLOCK		
GIFT		
FORK		
GOLD		
STORE		
APPLE		
BIRD		

	IN	NOT IN
SCORE	/10	/10

TOTAL = $/20 \div 2 = /10$

TABLE HOUSE **BOWL FOOTBALL WINDOW** LAKE ROSE **DRESS** WHEAT COMPUTER

GLOVE KING MOON **CLOCK GIFT FORK GOLD STORE APPLE BIRD**

SCAr					-
15. COPYING	[2 design pages (26, 27)]				
"HERE I HAVE A	A FIGURE FOR YOU TO COPY" [avoi	d naming designs].			
a.) [diamond]			0	1	2
b.) [arrow]			0	1	2
		TO	ΓAL		/4
16. SPATIAL R	EVERSAL				
"NOW I WANT Y	OU TO DRAW ANOTHER ONE LIKE	THIS" [point to arrow]			
"BUT THIS TIME	POINTING THE OPPOSITE WAY".	[avoid indicating direction	າ].	0	5
		TO	ΓAL		/5
17. IDEOMOTO	PR				
1. "SHOW ME H	OW YOU WOULD STIR A CUP OF T	EA"	0	1	
2 "SHOW ME H	OW YOU WOULD HAMMER A NAIL"	•	0	1	

18. CLOCK [4 circle pages (28 - 31)]

[1st circle - blank]

"I WANT YOU TO WRITE IN THE NUMBERS, AS ON A CLOCK FACE." 0 1 2
[2nd circle - blank]

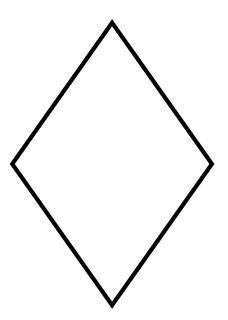
"ON THIS CIRCLE DRAW IN THE HANDS TO MAKE IT SAY 9 O'CLOCK." 0 1 2
[3rd circle - numbered]

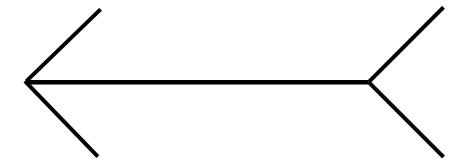
"NOW TRY THIS ONE. PUT IN THE HANDS FOR 5 PAST 10. MAKE IT

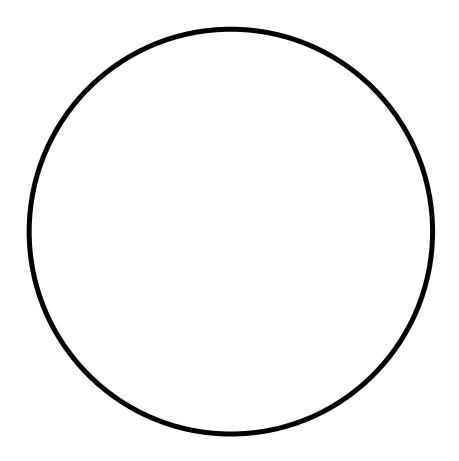
SAY 5 PAST 10." 0 1 2
[4th circle - numbered and hands (20 past 8)]

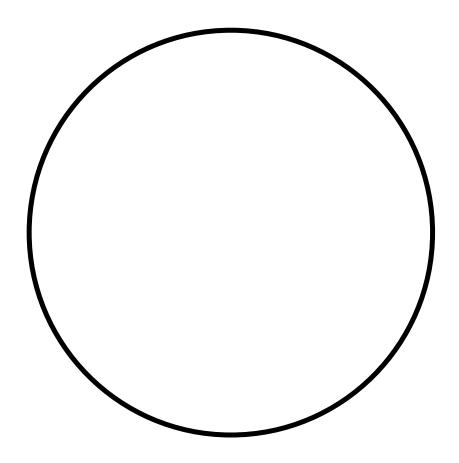
"WHAT TIME IS IT ON THIS CLOCK?" 0 1

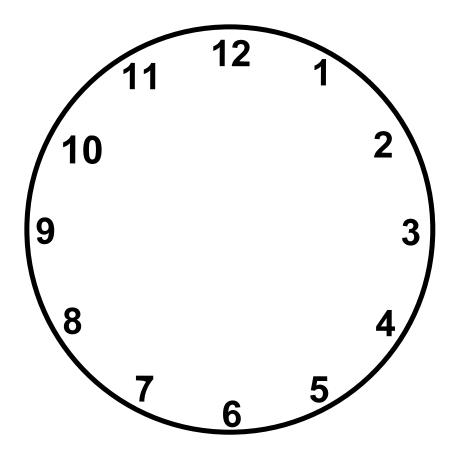
TOTAL _____/7

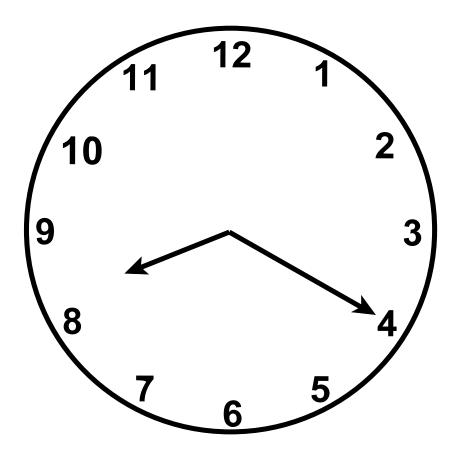












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19. PERSEVERATION

a) Motor Pattern:

[Demonstrate touching table alternately first with palm of hand and then with fist on edge, i.e., thumb facing up. Movements should be alternated at a rate of not faster than one movement per ½ second and no slower than one movement per second. Have the patient copy your motions for 5 trials or until you are sure that the patient has learned the pattern.] If patient is unable to learn the task within 10 trials, discontinue and score 0. If patient has successfully learned the task, then say:

"I WANT YOU TO REPEAT THIS MOVEMENT ON YOUR OWN UNTIL I SAY 'STOP'."

[If patient is unable to do this after several attempts, say "STOP". Otherwise let him/her do at least five repetitions using his/her preferred hand.]

0 1

b) Visual Pattern: [sheet with pattern (page 33)]

"I WANT YOU TO COPY THIS PATTERN. START COPYING BELOW THE EXAMPLE, AND THEN CONTINUE IT TO THE END OF THE PAGE. START HERE"

[Point to the space below the pattern. Encourage patient to continue to right margin of page, such that the design is not just copied, but repeated twice. If patient makes an error while copying the pattern (but not while continuing it) draw it to the patient's attention the first time and refer back to the pattern. After this, no further help.]

	0	1	
TOTAL			_/2



(See KSCAr^{+Drive} Manual)

START



Previous level?
(Premorbid Level)

WHAT LEVEL DID THE INDIVIDUAL FUNCTION AT PREVIOUSLY?

Above Avg ____

Average

Below Avg_



USING the CHART for NORMALS (right)

CIRCLE the INDIVIDUAL'S TOTAL
SCORE and READ the
CUMULATIVE PERCENT and

RANGE that the SCORE FALLS IN. Cumulative Percent

Range: Above Avg

Average ____ Below Avg ____ STEP 2: Compare to

Normals

Score	Cumulative Percent	Descriptive Range
122	97	A
118	95	A
115	87	V
114	82	G
113	77	
112	70	
111	58	A V E
110	47	R
109	33	A G E
107	28	
106	13	Α
105	12	V
104	5	G
103	2	▼

Normals

STEP 3: Is there evidence of decline?

Is THERE a **DIFFERENCE**

BETWEEN the INDIVIDUAL'S SCORE and YOUR

PREMORBID ESTIMATE?

NO \triangleleft

YES

STOP!

The INDIVIDUAL'S SCORE is in the ESTIMATED RANGE (or higher). **NO FURTHER ANALYSIS** is NEEDED. THEREFORE, SIGNIFICANT BRAIN DAMAGE is UNLIKELY. FURTHER ANALYSIS IS REQUIRED GO TO STEP 4 ON NEXT PAGE

STEP 4: What is the degree of decline?

USING THE CHART FOR <u>DEMENTIA</u> (right), CIRCLE the INDIVIDUAL'S **TOTAL SCORE** and READ the **CUMULATIVE PERCENT** and RANGE.

Cumulative Percent _____

Range: Mild ____ Moderate ____ Severe ____



GO TO NEXT PAGE

	DEMENT	IA
Score	Cumulative Percent	Descriptive Range
105	95	M
102	89	'
100 98	85 79	I L D
96	73	
95	71	М
94	67	0
92	60	D
81	56	E
89	50	R
87	45	Α
85	41	T E
83	36	E
81	30	
79	25	
77	21 17	S E V
76 70	10	V
60	5 5	v R
	<u> </u>	- 1

SUB-TOTAL SCORES

STEP 5: Which area(s) are most affected?



CIRCLE the 3 SUB-TEST **SCORES** on the CHART (at right). **OBTAIN LEVELS and** DESCRIPTIONS for EACH.

LANG VIS-MOT

Cum%		

MEM

(Circle One)	(Circle One)	(Circle One)
Unimp*	Unimp*	-

Mild Mild Mild Mod Mod Mod

Severe Severe Severe

* Unimpaired

DEMENTIA

La	angua	ge	Vis	ual-M	otor	Memory		
Score	Cumulative Percent	Description	Score	Cumulative Percent	Description	Score	Cumulative Percent	Description
39	100	U	31	100	U	39.5	99	М
		N			N	36.5	95	I
		ı			ı	35.5	91	L
38	77	*	30	85	*	34	83	D
37	64	М	29	78		33	79	
			28	67	М	32	74	М
		L			I	31	66	0
36	50	D	27	65	L	29	59	D
35	42		25	58	D	27.5	55	Е
		М	24	50		27	51	R
		0			М			Α
34	36	D	23	42	0	26	43	Т
		**			D			
			21	36	**	25	34	
33	30		20	29		24	26	
32	23	S	19	23	S	23	21	S
31	15	Е	18	15	Е	22	16	Е
30	8	V	16	9	V	20.5	10	V
27	5	***	14	5	***	17	5	***
			*	UNIMPA	AIRED			

MODERATE

*** SEVERE



GO TO NEXT PAGE

STEP 6: Should he/she drive a car?

DRIVE Score	Percentage of subjects who PASSED Road Test	Percentage of subjects who FAILED Road Test
47	100	0
46	83.3	16.7
45	71.4	28.6
44	50	50
43 *	not-computed	not-computed
≤42	0	100

^{*} As only 1 person in the sample scored 43, and passed the road test, the percentages passed/failed were not calculated for this table.