

CNS Vital Signs Clinical Report	Test Date: January 26, 2009 09:52:54
Subject ID: 02124	Administrator: TA Patient
Language: English (United States)	Age: 81
Total Test Time: 30:3 (min:secs)	Total time taken to complete all test in this report.

Above average domain scores indicate a standard score in that domain of greater than 109. Average is 90-109. Low Average is 80-89. Below Average is 70-79. Very Low is less than 70. Reaction times are in milliseconds. An * denotes that "lower is better", otherwise higher scores are better.

Patient Profile	Percentile Range			> 74	25 - 74	9 - 24	2 - 8	< 2
	Standard Score Range			> 109	90 - 109	80 - 89	70 - 79	< 70
Domain Scores	Subject Score	Standard Score	Percentile	Above	Average	Low Average	Low	Very Low
Composite Memory	92	108	70		X			
Verbal Memory	48	104	61		X			
Visual Memory	44	110	75	X				
Psychomotor Speed	120	102	55		X			
Reaction Time*	658	123	94	X				
Cognitive Flexibility	35	111	77	X				
Processing Speed	31	106	66		X			
Executive Functioning	35	111	77	X				

Verbal Memory Test (VBM)	Score	Standard	Percentile	
Correct Hits - Immediate	10	94	34	Memory test: Subjects have to remember 15 words and recognize them in a field of 15 distractors. The test is repeated at the end of the battery. "Correct Hits" refers to the number of target words recognized. Low scores indicate verbal memory impairment. Deficits in delayed recognition occur in patients with early dementia.
Correct Passes - Immediate	15	112	79	
Correct Hits - Delay	8	95	37	
Correct Passes - Delay	15	112	79	
Visual Memory Test (VSM)	Score	Standard	Percentile	
Correct Hits - Immediate	10	90	25	Memory test: Subjects have to remember 15 geometric figures and recognize them in a field of 15 distractors. The test is repeated at the end of the battery. "Correct Hits" refers to the number of target figures recognized. Low scores indicate visual memory impairment. Deficits in delayed recognition occur in patients with early dementia.
Correct Passes - Immediate	13	124	95	
Correct Hits - Delay	9	92	30	
Correct Passes - Delay	12	116	86	
Finger Tapping Test (FTT)	Score	Standard	Percentile	
Right Taps Average	44	100	50	Motor speed and fine motor control test: There are three rounds of tapping with each hand. Low scores indicate motor slowing. Most people are faster with their preferred hand but not always.
Left Taps Average	45	102	55	
Symbol Digit Coding (SDC)	Score	Standard	Percentile	
Correct Responses	31	103	58	Psychomotor speed and visual-motor coordination test: Errors may be due to impulsive responding, misperception or confusion. SDC is very sensitive to aging and also keyboarding skills. SDC is a two minute test.
Errors*	0	110	75	
Stroop Test (ST)	Score	Standard	Percentile	
Simple Reaction Time*	536	92	30	Processing speed, cognitive flexibility, and inhibition/disinhibition test: Prolonged reaction times indicate cognitive slowing/impairment. Errors may be due to impulsive responding, misperception or confusion. Reading disabilities may be apparent in this test. The ST generates simple and complex reaction times.
Complex Reaction Time Correct*	632	114	82	
Stroop Reaction Time Correct*	683	121	92	
Stroop Commission Errors*	0	110	75	
Shifting Attention Test (SAT)	Score	Standard	Percentile	
Correct Responses	40	107	68	Executive control and set shifting test: Subjects have to adjust their responses to randomly changing rules. The best scores are high correct responses, few errors and a short reaction time. Normal subjects may be slow but accurate, or fast but not so accurate. Attention deficit disabilities may be apparent.
Errors*	5	115	84	
Correct Reaction Time*	1183	110	75	

The CNS Vital Signs computerized neuropsychological assessment interpretation guide.

Additional information can be found on the CNS Vital Signs website: www.cnsvs.com

CNS Vital Signs VS7 clinical battery is a precise computerized assessment of neurocognitive status, which measures the speed and accuracy of five basic mental functions. These mental functions are indicators of the health and integrity of the brain's higher functions. The CNS Vital Signs report is used to evaluate and manage many neuro/psych conditions by:

Clinical Severity Grading (Single Administration) CPT Code: 96101/02/03/16 or 96118/19/20 CNS/Neurocognitive Tests
The CNS Vital Signs computerized neuropsychological assessment can provide diagnostic clarification and grading of the clinical severity of impairment for patients with subclinical or obvious cognitive deficits. CNS Vital Signs is sensitive to the functional manifestations.

Monitoring and Grading Disease Progression (Serial Administration) CPT Code: 96101/02/03/16 or 96118/19/20 CNS/Neurocognitive Tests. CNS Vital Signs objectively documents and grades patient's neurocognitive status. Serial testing of impairment permits assessment of the progression of disease. This information guides the clinician's decision for the most appropriate treatment and/or referral.

Clarify or Confirm Diagnosis of Sub-clinical or Obvious Deficits(Single Administration) CPT Code: 96101/02/03/16 or 96118/19/20 CNS/Neurocognitive Tests. CNS Vital Signs can assist the clinician in clarifying the uncertainties in diagnosis. CNS Vital Signs also documents the status and degree of neurocognitive impairment before, during, and after treatment.

Medication ManagementCPT Code: 90862 Medication Management. With the advent of computerized neurocognitive tests such as CNS Vital Signs and medications designed to treat diseases characterized by cognitive dysfunction (e.g., Alzheimer's disease, epilepsy, attention deficit hyperactivity disorder, etc.), neurocognition has become a primary outcome measure for clinicians to use in the evaluation and management of their patients.

CNS Vital Signs Generates Profiles for Different ConditionsClinicians will recognize over time that each domain is sensitive to different clinical conditions. Clinicians will be able to compare age matched patients with MCI and dementia compared to norms as profiled on the report. The same utility exists for ADHD, brain injury, epilepsy and other neurological diseases. It is important to note that patients may experience global deficits or domain specific deficits across a variety of neurological disease states.

	Memory	Psychomotor Speed	Reaction Time	Complex Attention	Cognitive Flexibility
Mild Cognitive Impairment (MCI)	XX	X	X	XX	XX
Dementia	XX			XX	XX
Brain Injury		XX	X	X	XX
AD/HD			X	XX	XX
Depression		X	X	XX	XX
Executive Control Function			XX	XX	XX

XX **Most Sensitive**
 X **Some Sensitive**
 Low Sensitive

Evaluating Executive Control Function

Executive control functions refer to the capacity for autonomous behavior beyond the structure of external guidance. In clinical terms, this refers to initiative, motivation, spontaneity, planning, judgment, insight, goal-directed behavior, the ability to operate in favor of a remote or an abstract reward, the capacity for self-monitoring, and the flexibility required for self-correction. CNS Vital Signs has three tests that are sensitive to **executive control functions**.

Neurocognitive Domains Measured: The domain scores are computed from the seven neuropsychological tests. For a more fine-grained analysis examination the individual test scores may be needed.

Neurocognition Index (NCI) - An average of the five neurocognitive domains and a general assessment of the overall neurocognitive status of the patient. **Relevance:** Summary View.

Memory - Problems with the storage, manipulation and retrieval of information. The domain measures the ability to remember words and geometric figures. **Relevance:** Remembering, turning off the stove, recalling an appointment or rehabilitation information.

Psychomotor Speed - Problems with slowed information processing (i.e., perceiving, attending/responding to incoming information Motor speed, fine motor coordination, and visual-perceptual ability. **Relevance:** Medication effect.

Reaction Time - Problems with reacting to stimuli. Speed of reaction to complex directions (in milliseconds). **Relevance:** Driving a car, attending to conversation, tracking and responding to a set of simple instructions.

Complex Attention - Problems attending to multiple stimuli at the same time. Ability to maintain focus, track information

over brief or lengthy periods of time, performs mental tasks quickly and accurately. **Relevance:** Self-regulation, learning, productivity.

Cognitive Flexibility - Problems shifting attention between two stimuli. Ability to adapt to rapidly changing directions and/or to manipulate the information. **Relevance:** Switching tasks, decision-making, impulse control, strategy formation.

Attention should be paid to both the nature and pattern of responses as well as to the quantity of errors committed. Patient's who score average or above average on all five domains are not likely to be impaired.

Patient's who score well below average in one domain or below average in two domain areas, might well be impaired and should be evaluated further. The first step, in evaluating such a patient is to repeat the test under more favorable circumstances.

If the scores are equally low the second time, a targeted work-up is necessary. **NORMAL AGING** affects performance on all of these tests; but the range of normal scores are based on data from normal controls who are the same age as the patient being tested. **EDUCATION and SPECIAL SKILLS** may also affect test performance; therefore, concern should be taken for patient's that are very intelligent or well educated yet their scores are below average. Patient's who are less intelligent, may score below average or well below average. These results, however, may be less meaningful. They may simply be a function of the patient's inherent weakness. Like any laboratory test, an abnormal result should be the occasion of a differential diagnosis, and further inquiry.

To Order Test Assessments GO TO: www.cnsvs.com, EMAIL: support@cnsvs.com, or PHONE the SUPPORT Line: 888.750.6941; OUTSIDE the USA 202.449.8492

Medical Outcomes Survey (MOS) SF-36 (page 1 of 2)

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Domain	Score	Standard	Percentile	
Physical Functioning	35	81	10	As part of the Medical Outcomes Survey (MOS) - a multi-year, multi-site study to explain variations in patient outcomes - RAND (www.rand.org) developed the 36-Item Medical Outcomes Survey (SF-36). SF-36 is a set of generic, coherent, and easily administered quality-of-life measures. These measures rely upon patient self-reporting and are now widely utilized by managed care organizations and by Medicare for routine monitoring and assessment of care outcomes in adult patients.
Role Functioning/Physical	50	99	47	
Role Functioning/Emotional	100	113	81	
Energy/Fatigue	30	85	16	
Emotional Wellbeing	76	104	61	
Social Functioning	100	113	81	
Pain	68	98	45	
General Health	20	74	4	
Health Change	25	78	7	

Medical Outcomes Short Form Health Survey (SF-36) Questions

1	In general, would you say your health is:	Fair
2	Compared to one year ago, how would you rate your health in general now?	Somewhat worse now than one year ago

The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

3	Vigorous activities, such as running lifting heavy objects, participating in strenuous sports	Yes, limited a lot
4	Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling or playing golf	Yes, limited a lot
5	Lifting or carrying groceries	No, not limited at all
6	Climbing several flights of stairs	Yes, limited a lot
7	Climbing one flight of stairs	Yes, limited a lot
8	Bending, kneeling, or stooping	Yes, limited a lot
9	Walking more than a mile	Yes, limited a lot
10	Walking several blocks	Yes, limited a little
11	Walking one block	No, not limited at all
12	Bathing or dressing yourself	No, not limited at all

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

13	Cut down on the amount of time you spent on work or other activities	No
14	Accomplished less than you would like	Yes
15	Were limited in the kind of work or other activities	No
16	Had difficulty performing the work or other activities (for example, it took extra effort)	Yes

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

17	Cut down on the amount of time you spent on work or other activities	No
18	Accomplished less than you would like	No
19	Didn't do work or other activities as carefully as usual	No

During the past 4 weeks, to what extent has your physical health or emotional problems interfered with ...

20	your normal social activities with family, friends, neighbors, or groups?	Not at all
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During the past 4 weeks ...

21	How much bodily pain have you had?	Mild
22	How much did pain interfere with your normal work (including both work outside the home and housework)?	Slightly

Medical Outcomes Survey (MOS) SF-36 (page 2 of 2)

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These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks ...

23	Did you feel full of pep?	Some of the time
24	Have you been a very nervous person?	A little of the time
25	Have you felt so down in the dumps that nothing could cheer you up?	A little of the time
26	Have you felt calm and peaceful?	A good bit of the time
27	Did you have a lot of energy?	None of the time
28	Have you felt downhearted and blue?	Some of the time
29	Did you feel worn out?	A good bit of the time
30	Have you been a happy person?	All of the time
31	Did you feel tired?	A good bit of the time

During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with ...

32	your social activities (like visiting with friends, relatives, etc.)?	None of the time
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How TRUE or FALSE is the following statement for you.

33	I seem to get sick a little easier than other people	Mostly false
34	I am as healthy as anybody I know	Definitely false
35	I expect my health to get worse	Definitely true
36	My health is excellent	Definitely false