

THE HOPKINS VERBAL LEARNING TEST

Abstract

A new test of verbal learning and memory, the Hopkins Verbal Learning Test, was developed. The test consists of three trials of free-recall of a 12-item, semantically categorized list, followed by yes/no recognition. Six parallel forms yielded equivalent results in normals. The performance of patients with Alzheimer's disease and chronic amnesia is described. The test is likely to be useful in patients too impaired for more comprehensive memory assessments and where repeated testing is necessary.

Clinical practice and research in neuro-psychology often require brief, repeated assessments of the same patient over time. Most of the newer clinical memory tests are of limited utility for this purpose because of their length, complexity and/or lack of parallel forms. The WMS-R, for example, require 45 to 60 minutes for administration and, at present, is available in only one form. The California Learning Test (Delis, Kramer, Kaplan & Ober, 1986) is gaining popularity as a relatively comprehensive verbal memory test, and an alternate form has been developed (Delis, et al), but its length and complexity often make it unwieldy for use with demented or otherwise difficult-to-test patients.

Description of the Test

Each form of the Hopkins Verbal Learning Test (HVLT) consists of a 12-item word list, composed of four words from each of the three semantic categories. The subject is instructed to listen carefully as the examiner reads the word list and attempt to memorize the words. The word list is then read to the subject at the approximate rate of one word every 2 seconds. The patient's free recall of the list is recorded. The same procedure is repeated for two more trials. After the third learning trial, the patient is read 24 words and is asked to say "yes" after each word that appeared on the recall list (12 targets) and "no" after each word that did not (12 distractors). Half of the distractors are drawn from the same semantic categories as the targets (related distractors) and half are drawn from other categories (unrelated distractors).

There are several advantages of the HVLT over many existing memory tests. First, it requires no more than 10 minutes to administer. Second, it is well-tolerated by even moderately to severely demented patients, while not having a ceiling effect (in recall) in neurologically normal subjects. Third, the existence of six comparable forms makes the HVLT particularly useful in research where patients are assessed at frequent intervals.

The HVLT was recently employed in a study of the effects of intravenous physostigmine in Alzheimer's disease (Tune et al, in press). Patients received an intravenous infusion of one of three doses of drug, or placebo, on four consecutive days. Memory and other cognitive functions had to be administered rapidly, during the 20 minutes of maximum drug effect. The HVLT proved an ideal test for this purpose.

HOPKINS VERBAL LEARNING TEST
Form 1: four-legged animals, precious stones, human dwellings

Part A: Free Recall

	Trial 1	Trial 2	Trial 3
EMERALD	_____	_____	_____
HORSE	_____	_____	_____
TENT	_____	_____	_____
SAPPHIRE	_____	_____	_____
HOTEL	_____	_____	_____
CAVE	_____	_____	_____
OPAL	_____	_____	_____
TIGER	_____	_____	_____
PEARL	_____	_____	_____
COW	_____	_____	_____
HUT	_____	_____	_____
# CORRECT	_____	_____	_____

HORSE	ruby*	CAVE	balloon	coffee	LION
house*	OPAL	TIGER	boat	scarf	PEARL
HUT	EMERALD	SAPPHIRE	dog*	apartment*	penny
TENT	mountain	cat*	HOTEL	COW	diamond*

Part B: Recognition:

True-Positives: _____ /12

False-Positive Errors: Related: _____ /6 Unrelated: _____ /6

Discrimination Index: (# True-Positives) – (# False-Positives) = _____

HOPKINS VERBAL LEARNING TEST
Form 2: kitchen utensils, alcoholic beverages, weapons

Part A: Free Recall

	Trial 1	Trial 2	Trial 3
FORK	_____	_____	_____
RUM	_____	_____	_____
PAN	_____	_____	_____
PISTOL	_____	_____	_____
SWORD	_____	_____	_____
SPATULA	_____	_____	_____
BOURBON	_____	_____	_____
VODKA	_____	_____	_____
POT	_____	_____	_____
COW	_____	_____	_____
HUT	_____	_____	_____
WINE	_____	_____	_____
# CORRECT	_____	_____	_____

Part B: Recognition:

spoon*	PISTOL	doll	whiskey*	FORK	POT
harmonica	can opener*	SWORD	pencil	gun*	VODKA
knife*	RUM	trout	BOMB	PAN	gold
WINE	lemon	SPATULA	BOURBON	beer*	RIFLE

True-Positives: _____/12

False-Positive Errors: Related: _____/6 Unrelated: _____/6

Discrimination Index: (# True-Positives) – (# False-Positives) = _____

HOPKINS VERBAL LEARNING TEST
Form 3: musical instruments, fuels, food flavorings

Part A: Free Recall

	Trial 1	Trial 2	Trial 3
SUGAR	_____	_____	_____
TRUMPET	_____	_____	_____
VIOLIN	_____	_____	_____
COAL	_____	_____	_____
GARLIC	_____	_____	_____
KEROSINE	_____	_____	_____
VANILLA	_____	_____	_____
WOOD	_____	_____	_____
CLARINET	_____	_____	_____
FLUTE	_____	_____	_____
CINNAMON	_____	_____	_____
GASOLINE	_____	_____	_____
# CORRECT	_____	_____	_____

Part B: Recognition:

pepper*	GARLIC	WOOD	drum*	oil*	SUGAR
Harmonica	salt*	priest	chair	COAL	CLARINET
TRUMPET	basement	CINNAMON	FLUTE	electricity*	Moon
KEROSINE	VANILLA	GASOLINE	sand	piano*	VIOLIN

True-Positives: _____/12

False-Positive Errors: Related: _____/6 Unrelated: _____/6

Discrimination Index: (# True-Positives) – (# False-Positives) = _____

HOPKINS VERBAL LEARNING TEST
Form 4: birds, articles of clothing, carpenter's tools

Part A: Free Recall

	Trial 1	Trial 2	Trial 3
CANARY	_____	_____	_____
SHOES	_____	_____	_____
EAGLE	_____	_____	_____
BLOUSE	_____	_____	_____
NAILS	_____	_____	_____
CROW	_____	_____	_____
BLUEBIRD	_____	_____	_____
SCREWDRIVER	_____	_____	_____
PANTS	_____	_____	_____
CHISEL	_____	_____	_____
SKIRT	_____	_____	_____
WRENCH	_____	_____	_____
# CORRECT	_____	_____	_____

Part B: Recognition:

BLUEBIRD	shirt*	CHISEL	EAGLE	chocolate	robin*
chapel	SCREWDRIVER	CROW	sparrow*	WRENCH	PANTS
NAILS	socks*	child	SHOES	hair	hammer*
CANARY	apple	SKIRT	saw*	silver	BLOUSE

True-Positives: _____/12

False-Positive Errors: Related: _____/6 Unrelated: _____/6

Discrimination Index: (# True-Positives) – (# False-Positives) = _____

HOPKINS VERBAL LEARNING TEST
Form 5: occupations/professions, sports, vegetables

Part A: Free Recall

	Trial 1	Trial 2	Trial 3
TEACHER	_____	_____	_____
BASKETBALL	_____	_____	_____
LETTUCE	_____	_____	_____
DENTIST	_____	_____	_____
TENNIS	_____	_____	_____
BEAN	_____	_____	_____
ENGINEER	_____	_____	_____
POTATO	_____	_____	_____
PROFESSOR	_____	_____	_____
GOLF	_____	_____	_____
CORN	_____	_____	_____
SOCCER	_____	_____	_____
# CORRECT	_____	_____	_____

Part B: Recognition:

True-Positives: _____/12

TENNIS	football*	PROFESSOR	spinach*	lawyer*	submarine
GOLF	DENTIST	LETTUCE	spider	water	BEAN
BASKETBALL	doctor*	CORN	baseball*	TEACHER	snake
carrot*	ENGINEER	glove	SOCCER	POTATO	tulip

False-Positive Errors: Related: _____/6 Unrelated: _____/6

Discrimination Index: (# True-Positives) – (# False-Positives) = _____

HOPKINS VERBAL LEARNING TEST
Form 6: fish, parts of a building, phenomens

Part A: Free Recall

	Trial 1	Trial 2	Trial 3
SHARK	_____	_____	_____
WALL	_____	_____	_____
HERRING	_____	_____	_____
RAIN	_____	_____	_____
FLOOR	_____	_____	_____
HAIL	_____	_____	_____
CATFISH	_____	_____	_____
ROOF	_____	_____	_____
SALMON	_____	_____	_____
STORM	_____	_____	_____
CEILING	_____	_____	_____
SNOW	_____	_____	_____
# CORRECT	_____	_____	_____

Part B: Recognition:

True-Positives: _____/12

HAIL	bass*	SNOW	bank	FLOOR	mustard
window*	CEILING	canyon	RAIN	ladder	STORM
HERRING	SALMON	tornado*	trout*	melon	ROOF
SHARK	hurricane*	elbow	CATFISH	WALL	door*

False-Positive Errors: Related: _____/6 Unrelated: _____/6

Discrimination Index: (# True-Positives) – (# False-Positives) = _____