

Dexterity Test

Patient full name: _____ Age: _____ Gender: _____ Occupation: _____

Common physical activities:

History of previous injuries:

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Area of pain/discomfort: _____ Date assessed: _____

The following are some of the most common tests used to evaluate the patient's dexterity. Please check the test/s you performed and choose the corresponding results from the options provided. Use the Additional Notes section to record any further details.

Purdue pegboard test

1. Seat the subject comfortably at a table with the Purdue Pegboard placed directly in front of them.
2. Explain the purpose of the test and provide general instructions. Administer the following subtests in order:
 - a. **Right hand:** Subject places as many pins as possible in the right-hand row, starting at the top with a 30 second time limit.
 - b. **Left hand:** Subject places as many pins as possible in the left-hand row, starting at the top with a 30 second time limit.
 - c. **Both hands:** Subject places as many pairs of pins as possible simultaneously in both rows with a 30 second time limit.
 - d. **Assembly:** Subject assembles as many pin-washer-collar-washer units as possible with alternating hands for each piece within a 60 second time limit.

Performed? Yes No

Scoring and interpretation

1. Record the following scores:
 - a. **Right and left hands:** Number of pins placed
 - b. **Both hands:** Number of pairs of pins placed
 - c. **Calculate the combined score:** Right + left + both hands (sum of first three scores) = _____
 - d. **Assembly:** Number of complete assemblies multiplied by 4, plus any additional parts
2. Compare scores to normative data based on age, gender, and handedness.

Mean performance on Purdue pegboard in children by age (one trial per hand) **Age is years.months*

Age	Right hand		Left hand		Both hands	
	Mean	SD	Mean	SD	Mean	SD
2.6–2.11	4.70	1.08	4.05	1.15	2.95	1.28
3.0–3.5	5.54	1.62	5.13	1.42	3.63	1.53
3.6–3.11	6.80	1.26	6.00	1.38	4.20	1.23
4.0–4.5	8.08	1.49	6.68	1.25	5.23	1.44
4.6–4.11	9.07	1.58	8.20	1.56	6.07	1.20
5.0–5.5	10.16	1.77	9.19	2.02	6.81	1.76
5.6–5.11	9.90	1.59	9.00	1.26	6.35	1.69

Mean performance on Purdue pegboard in children by age (one trial per hand) *Age is years.months

Age	Females								Males							
	Preferred hand	SD	Non preferred hand	SD	Both hands	SD	Assemblies	SD	Preferred hand	SD	Non preferred hand	SD	Both hands	SD	Assemblies	SD
15–20	16.69	2.16	16.10	1.57	13.76	1.41	41.83	5.08	15.56	1.52	15.09	1.42	12.59	1.56	40.25	4.64
21–25	16.64	2.31	15.89	1.79	13.75	1.54	42.47	5.43	15.44	1.71	15.08	1.98	12.97	1.18	38.39	6.60
26–30	17.25	1.38	16.13	1.50	13.31	1.45	40.44	5.90	16.22	1.81	15.41	1.08	12.94	1.29	39.13	3.58
31–40	15.94	1.61	15.63	1.89	13.13	1.31	41.44	5.75	15.35	1.72	15.12	1.77	12.42	1.65	37.50	3.64

Performance (one-trial) on the Purdue pegboard in older adults, by age and sex

Age	Females								Males							
	Right	SD	Left	SD	Both	SD	Assembly	SD	Right	SD	Left	SD	Both	SD	Assembly	SD
60–69	14.3	1.3	13.7	1.3	10.9	1.5	30.6	5.3	12.7	1.5	12.7	1.5	10.2	1.3	27.6	5.1
70–79	12.7	1.8	11.8	1.8	9.7	1.7	25.0	5.8	11.2	1.9	10.7	2.1	8.2	2.0	23.1	5.5
80+	11.5	1.8	10.7	2.1	8.3	1.9	21.8	5.5	10.1	2.0	9.8	1.7	7.4	1.6	18.5	5.2

Notes:

Nine-hole peg test

1. Set up the test:

- Square board with 9 holes (3.2 cm apart, 1.3 cm deep)
- 9 wooden pegs (0.64 cm diameter, 3.2 cm long)
- Container for pegs

2. Place pegboard in front of patient, container on dominant hand side. Ensure pegboard has non-slip surface

3. Provide instructions and demonstration to the patient:

- "Pick up pegs one at a time using only your [right/left] hand."
- "Put them into the holes in any order until all holes are filled."

- "Then remove pegs one at a time and return them to the container."

- "Stabilize the pegboard with your other hand."

- "Work as quickly as you can."

4. Conduct a practice trial with dominant hand.

5. Now, perform timed test with dominant hand. Start the stopwatch when patient touches first peg. Instruct the patient to work quickly. Say "Faster" during the test. When last peg is placed, say "Out again...faster".

6. Stop stopwatch when last peg hits container.

Performed? Yes No

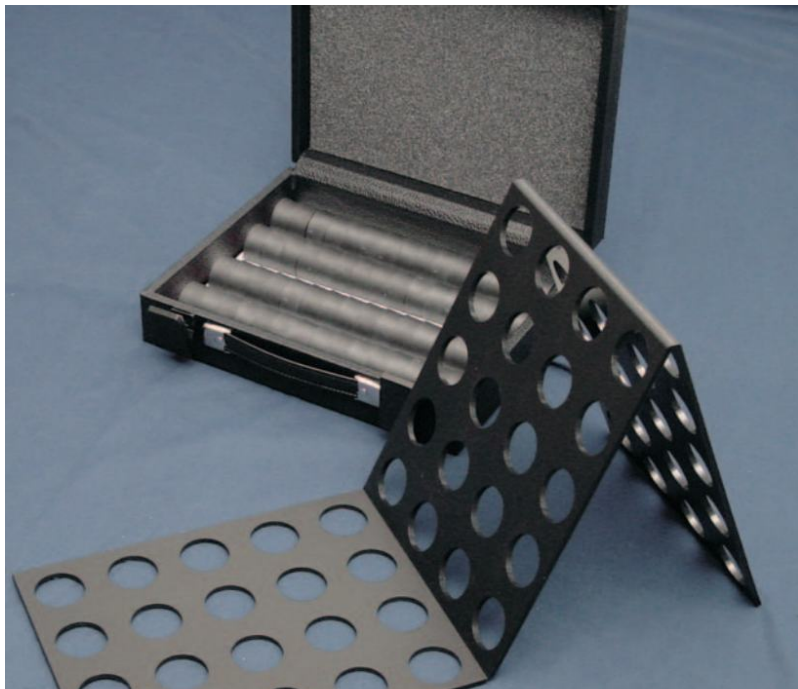
Scoring and interpretation

1. Record time in seconds for each hand separately
2. Compare results to normative data based on age and gender:

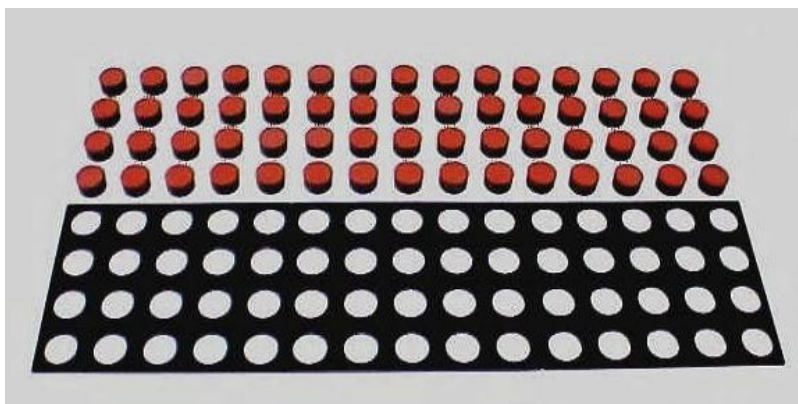
Age groups	Males				Males			
	Mean (right)	SD	Mean (left)	SD	Mean (right)	SD	Mean (left)	SD
21–25	16.41	1.65	17.5	1.73	16.04	1.82	17.21	1.55
26–30	16.88	1.89	17.84	2.22	15.90	1.91	16.97	1.77
31–35	17.54	2.70	18.47	2.94	16.69	1.70	17.47	2.13
36–40	17.71	2.12	18.62	2.30	16.74	1.95	18.16	2.08
41–45	18.54	2.88	18.49	2.42	16.54	2.14	17.64	2.06
46–50	18.35	2.47	19.57	2.69	17.36	2.01	17.96	2.30
51–55	18.9	2.37	19.84	3.10	17.38	1.88	18.92	2.29
56–60	20.90	4.55	21.64	3.39	17.86	2.39	19.48	3.26
61–65	20.87	3.50	21.60	2.98	18.99	2.18	20.33	2.76
66–70	21.23	3.29	22.29	3.71	19.90	3.15	21.44	3.97
71+	25.79	5.60	25.95	4.54	22.49	6.02	24.11	5.66

Notes:

Minnesota manual dexterity test



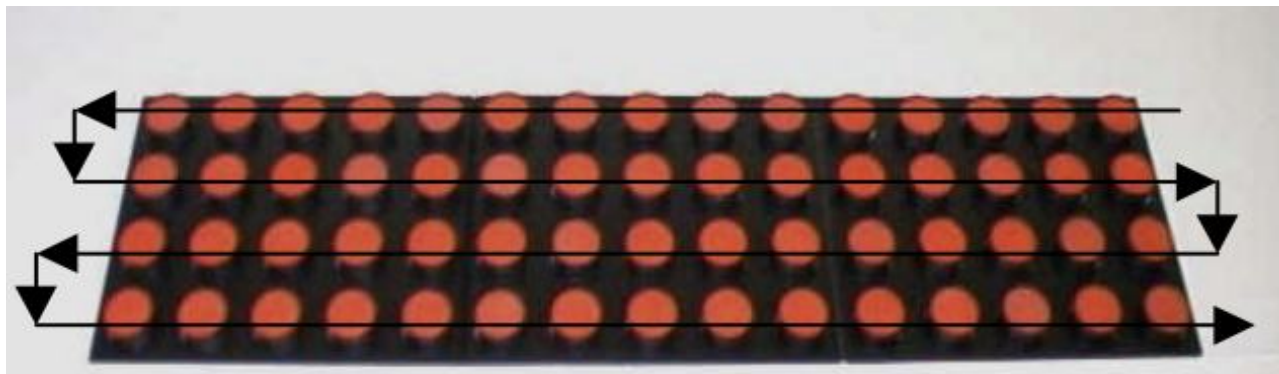
1. Place the board about 10 inches from the edge of the table. Insert all 60 disks into the holes. Subject should stand during the test.
2. Conduct a trial test before the timed test.
3. **Placing test:** Lift board, allowing disks to fall onto table in rows. Place board 1 inch from table edge in front of disks.



Instruct the patient to use dominant hand only. They should start from right moving to the left, completing one column before moving to next. They must make sure that all of the disks are fully inserted into the holes of the board before the trial is complete.

If they dropped a disk, they must pick it up and insert it into the proper hole before the time is stopped. The score will be the total number of seconds it takes to complete several trials.

4. **Turning test:** Put the board on the table about 1 inch from the edge closest to the subject. Insert all of the disks into the holes in the board with either the RED or BLACK side facing UP (the color must be consistent on the whole board). This is the starting position for the Turning Test.



The objective of this test is to see how fast they can pick up the disks with one hand, turn them with the other hand, and replace the disks back into the holes on the board. Start by demonstrating. With your left hand, pick up the block from the upper right-hand corner. Turn the disk while passing it to their right hand and return it into the original hole in the board with the BOTTOM side facing UP. They must work to their LEFT across the board on the top row.

You should continue to demonstrate until they complete the entire TOP row. As you start to demonstrate the second row, say:

“Now with your RIGHT hand, pick up the first block in the second row. Turn the disk while passing it to your LEFT hand and return it into the original hole with the BOTTOM side facing UP. You will work to your RIGHT until you complete the entire row.”

The subject always picks UP the blocks with the hand that LEADS and put them DOWN with the hand that FOLLOWS. Continue demonstrating the test in its entirety. Give them this instruction: “As you work back to the LEFT in the third row, you will use your LEFT hand to pick up the disk and your RIGHT hand to return it back to the original hole. Working back to your RIGHT on the fourth row, you must use your RIGHT hand to pick up the disk and your LEFT hand to return it.”

They should finish the test at a moderate speed. All of the disks must be turned so the same color is facing UP. The board should now be in the original starting position.

Performed? Yes No

Scoring and interpretation

1. Record time in seconds for each trial. Sum the times for all trials (excluding practice). This total is the raw score.
2. Compare raw score to normative data in manual.

COMPLETE MINNESOTA DEXTERITY TEST - INTERPRETATION CHART

Very low		Low				Average				High				Very high				VERBAL	SCALES				
1		2		3		4		5		6		7		8		9		STANINE					
30		35		40		45		50		55		60		65		70		STANDARD					
1	2	3	5	10	15	20	25	31	40	50	60	69	75	80	85	90	95	97		98	99	PERCENTILE	
302	293	286	279	267	261	256	251	246	241	236	230	225	221	219	215	211	205	201	197	193	Placing	Group testing 4 trials (seconds)	INDIVIDUAL TESTING (Total seconds by test)
265	260	253	243	230	223	217	212	207	201	195	189	184	181	178	175	170	164	158	156	150	Turning		
286	281	276	273	266	262	258	255	252	246	242	238	233	230	227	223	218	212	207	204	199	Placing		
231	226	224	220	214	210	206	203	201	197	192	188	184	181	178	175	171	165	161	158	154	Turning		
260	244	239	229	216	211	207	203	199	195	189	184	180	176	175	172	168	164	160	157	153	Displacing		
372	364	3358	351	340	333	327	321	316	309	301	293	266	281	276	269	262	251	244	239	230	1-Hand turning and placing		
215	210	206	202	195	190	187	183	180	175	171	166	161	158	155	151	146	140	135	132	126	2-Hand turning and placing		
217	213	210	207	202	198	195	193	190	187	183	179	176	173	171	168	164	159	156	153	149	Placing	Four trials	
176	173	170	167	163	160	157	155	152	149	146	143	139	137	135	132	120	125	121	119	116	Turning		
195	183	179	172	162	158	155	152	149	146	142	138	135	133	131	129	126	123	120	118	115	Displacing		
281	274	270	265	257	251	246	243	239	233	227	221	216	212	208	203	197	189	184	189	173	1-Hand turning and placing		
162	158	156	152	147	144	141	138	136	132	129	125	122	119	117	114	111	106	102	100	96	2-Hand turning and placing	Three trials	
147	144	142	140	136	134	132	130	128	126	123	121	117	116	115	113	110	107	104	102	100	Placing		
121	118	116	114	111	109	107	105	104	101	99	97	94	93	91	89	87	84	81	80	77	Turning		
110	108	107	106	103	101	100	99	98	96	95	93	90	90	89	88	86	84	82	81	79	Displacing		
189	185	182	179	173	169	166	163	160	157	153	146	145	142	139	136	133	127	123	120	116	1-Hand turning and placing	Two trials	
109	106	105	102	99	97	95	93	92	89	87	85	82	81	79	77	75	71	69	68	65	2-Hand turning and placing		
1	2	3	5	10	15	20	25	31	40	50	60	69	75	80	85	90	95	97	98	99	Average (Percentile)		

Notes:**Additional notes****References**

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