

Ref	Author	Year	Country	Age Range	Visual RT (ms)	Auditory RT (ms)	Tactile RT (ms)
2	Anger et al.	1993	USA	16-25	275.9		
2	Anger et al.	1993	USA	26-35	270.7		
3	Arab & Ang	2015	USA	20-59	242		
5	Benton	1977	USA	16-44	220	190	
5	Benton	1977	USA	46-63	240	215	
7	Blackburn & Benton	1955	USA	mean=38.5	208		
8	Brice & Smith	2002	UK	19-23	324		
9	Burpee & Stroll	1936	USA	[not given]	154		
10	Cattell	1886	Germany	[not given]	180		155
13	Collington & De Volder	2009	Canada	mean: 30±10		380	350
14	Collins & Long	1996	USA	18-46	310		
16	Davidson et al.	1990	USA	mean 11.18±1.11	320		345
17	Deary and Der	2005	UK	[not given]	300.3		
18	Der & Deary	2006	UK	18-42	309.6		
20	Donders	1868	Germany	"generally young"		201	
22	Edwards & Cohen	1961	USA	24-48	234.47		
23	Edwards et al.	2007	UK	35±1.3	276	221	296
24	Evarts et al.	1981	USA	20-45	254		
24	Evarts et al.	1981	USA	52-80	308		
26	Forbes	1945	UK	17-53	286		
27	Fozard et al.	1994	USA	16-24		225	
27	Fozard et al.	1994	USA	25-34		250	
27	Fozard et al.	1994	USA	35-44		250	
27	Fozard et al.	1994	USA	45-54		260	
27	Fozard et al.	1994	USA	55-64		260	
27	Fozard et al.	1994	USA	65-74		260	
27	Fozard et al.	1994	USA	75-84		275	
27	Fozard et al.	1994	USA	85+		265	
28	Galton	1880	UK	[not given]	185		
29	Goodenough	1935	USA	"college aged"		172	
30	Goodrich et al.	1989	UK	57-79			215
31	Gould et al.	2013	USA	22-27	279		
32	Hashemi	2015	Iran	25+	371.2		
36	Hyman	1953	USA	18-22	200		
34	Hetherington, Stuss, & Finlayson	1996	Canada	15-60	250		
35	Hick	1952	UK	experimenter + research worker	170		
37	Johanson	1922	USA	[not given]		143.9	
38	Jones	1937	USA	9th grade	151.4		
39	Jorm et al. 2004	1999	Australia	20-24	219.5		
39	Jorm et al. 2004	1999	Australia	40-44	232.8		
39	Jorm et al. 2004	1999	Australia	60-64	257.5		
40	Kleitman et al.	1937	USA	graduate students + instructor	163	153	
41	Klemmer	1957	USA	2 college students + 3 lab workers	170		
42	Kumar et al.	2010	India	7-May	260	256	270
42	Kumar et al.	2010	India	10-Aug	253	245	267
42	Kumar et al.	2010	India	12-Nov	248	233	252
42	Kumar et al.	2010	India	13-15	236	225	237
42	Kumar et al.	2010	India	18-20	227	204	221
42	Kumar et al.	2010	India	21-25	207	181	213
42	Kumar et al.	2010	India	26-30	213	195	214
42	Kumar et al.	2010	India	31-35	234	225	238
42	Kumar et al.	2010	India	36-40	260	240	264
42	Kumar et al.	2010	India	41-45	263	265	277
42	Kumar et al.	2010	India	46-50	285	276	289
42	Kumar et al.	2010	India	51-55	300	283	307
42	Kumar et al.	2010	India	56-60	305	290	313
42	Kumar et al.	2010	India	61-65	309	297	320
42	Kumar et al.	2010	India	66-70	328	320	336
44	Lefcourt & Siegel	1970	Canada	"college aged"	249.5		
45	Leonard	1959	UK	[not given]			182
46	Lorenzo et al.	1995	Mexico	22-30	160		
49	Merkel	1885	Germany	[not given]	190		
53	Obersteiner	1874	Germany	[not given]	140		
54	Patil & Phatale	2015	India	40-50	220	176	
60	Ponsford & Kinsella	1992	Australia	16-43	410		
62	Puts et al.	2014	USA	12-Aug			310.79
63	Reed, Vernon, & Johnson	2004	Canada	18-25	261		
64	Richerson, Robinson & Shum	2005	USA	mean: 22.7±1.2		218.6	216
64	Richerson, Robinson & Shum	2005	USA	mean: 59.4±8		276.9	331.5
65	Ruesch	1944	USA	mean: 28.6±8.4	300		
66	Sarno et al.	2003	Germany	17-66	242	200	291
67	Schilling	1920	USA	[not given]		166	
69	Seashore et al.	1941	USA	"college aged"	203		
69	Seashore et al.	1941	USA	"college aged"	197		
70	Sherwood & Selder	1979	USA	20-29	185		
70	Sherwood & Selder	1979	USA	30-39	195		
70	Sherwood & Selder	1979	USA	30-39	205		
70	Sherwood & Selder	1979	USA	40-49	195		
70	Sherwood & Selder	1979	USA	40-49	207		
70	Sherwood & Selder	1979	USA	50-59	190		
70	Sherwood & Selder	1979	USA	50-59	227		
71	Smith et al.	1999	UK	"college aged"	306		
72	Spence et al.	2000	Australia	17-49	300	270	260
73	Stuss et al.	1989	Canada	16-20	243.1		
73	Stuss et al.	1989	Canada	16-54	237.4		
73	Stuss et al.	1989	Canada	16-63	228.1		
74	Taimela	1991	Finland	17-29	199		
74	Taimela, Kujala, & Osterman	1991	Finland	18-28	183		
76	Thompson	1885	USA	[not given]	208		
77	Tuttle & Brown	1926	USA	[not given]		164.3	
79	Van Zomeran & Deelman	1976	Netherlands	16-39	259		
80	Warden et al.	2001	USA	"youngish"	254		
81	Wells	1913	USA	[not given]	180		
82	Westerlund & Tuttle	1931	USA	"college aged"	152		
83	Willison & Tombaugh	2006	Canada	mean: 19.5±1.22	284.61		
85	Yazdi et al.	2011	Iran	mean: 37.71±5.22	270.89		
86	Zahn & Mirsky	1999	USA	18-56		230	

Table 2.

Modality	Average Latency	Range of Latencies
Visual RT + Touchscreen	399 ± 16.3	348 - 432
Visual RT + Mouse	80.1 ± 8.0	59 - 104
Tactile RT + Mouse	31.7 ± 2.6	27 - 37
Tactile RT + BG	5.6 ± 0.25	4.8 - 6.1

References

- Anger WK, Cassitto MG, Liang YX, Amador RA, Hooisma JA, Chrislip DW, et al. (1993). Comparison of performance from three continents on the WHO-recommended neurobehavioral core test battery. *Environmental Research*. 62, 125-147.
- Arab L, Ang A. (2015). A cross sectional study of the association between walnut consumption and cognitive function among adult us populations represented in NHANES. *The journal of nutrition, health & aging*. 19, 284-290.
- Benton AL. (1977). Interactive effects of age and brain disease on reaction time. *Archives of Neurology*. 34, 369-370.
- Blackburn HL, Benton AL. (1955). Simple and choice reaction time in cerebral disease. *Stereotactic and Functional Neurosurgery*. 15, 327-338.
- Brice CF, Smith AP. (2002). Effects of caffeine on mood and performance: a study of realistic consumption. *Psychopharmacology*. 164, 188-192.
- Burpee RH, Stroll W. (1936). Measuring reaction time of athletes. *Research Quarterly. American Physical Education Association*. 7, 110-118.
- Cattell JM. (1886). The influence of the intensity of the stimulus on the length of the reaction time. *Brain*. 8, 512-515.
- Collignon O, De Volder AG. (2009). Further evidence that congenitally blind participants react faster to auditory and tactile spatial targets. *Canadian Journal of Experimental Psychology/Revue canadienne de psychologie expérimentale*. 63, 287.
- Collins LF, Long CJ. (1996). Visual reaction time and its relationship to neuropsychological test performance. *Archives of Clinical Neuropsychology*. 11, 613-623.
- Davidson RJ, Leslie SC, Saron C. (1990). Reaction time measures of interhemispheric transfer time in reading disabled and normal children. *Neuropsychologia*. 28, 471-485.
- Deary IJ, Der G. (2005). Reaction time, age, and cognitive ability: Longitudinal findings from age 16 to 63 years in representative population samples. *Aging, Neuropsychology, and cognition*. 12, 187-215.
- Der G, Deary IJ. (2006). Age and sex differences in reaction time in adulthood: results from the United Kingdom Health and Lifestyle Survey. *Psychology and Aging*. 21, 62.

- Donders FC. (1969). On the speed of mental processes. *Acta psychologica*. 30, 412-431.
- Donders FC. (1868). Over de snelheid van psychische processen. *Onderzoekingen gedaan in het Physiologisch Laboratorium der Utrechtsche Hoogeschool*. 2, 92-120.
- Edwards AE, Cohen S. (1961). Visual illusion, tactile sensibility and reaction time under LSD-25. *Psychopharmacologia*. 2, 297-303.
- Edwards L, Ring C, McIntyre D, Carroll D, Martin U. (2007). Psychomotor speed in hypertension: Effects of reaction time components, stimulus modality, and phase of the cardiac cycle. *Psychophysiology*. 44, 459-68.
- Evarts EV, Teräväinen H, Calne DB. (1981). Reaction time in Parkinson's disease. *Brain: a journal of neurology*. 104, 167-186.
- Forbes G. (1945). The effect of certain variables on visual and auditory reaction times. *Journal of Experimental Psychology*. 35, 153.
- Fozard JL, Vercruyssen M, Reynolds SL, Hancock PA, Quilter RE. (1994). Age differences and changes in reaction time: the Baltimore Longitudinal Study of Aging. *Journal of gerontology*. 49, 179-189.
- Galton F. (1890). Mental tests and measurements. *Mind*. 15, 373-381.
- Goodenough FL. (1935). The development of the reactive process from early childhood to maturity. *Journal of Experimental Psychology*. 18, 431.
- Goodrich S, Henderson L, Kennard C. (1989). On the existence of an attention-demanding process peculiar to simple reaction time: converging evidence from Parkinson's disease. *Cognitive Neuropsychology*. 6, 309-331
- Gould JA, Ciuffreda KJ, Yadav NK, Thiagarajan P, Arthur B. (2013). The effect of retinal defocus on simple eye-hand and eye-foot reaction time in traumatic brain injury (TBI). *Brain injury*. 27, 1643-1648.
- Hashemi F, Ashtiani AF, Mirminachi B, Sharafkhah M, Ekhlasi G, Jafari E, et al. (2015). Impact of hepatitis C virus infection on cognitive function in patients with covert hepatic encephalopathy. *Hepatitis monthly*. 15, 7.
- Hetherington CR, Stuss DT, Finlayson MA. (1996). Reaction time and variability 5 and 10 years after traumatic brain injury. *Brain injury*. 10, 473-486.
- Hick WE. (1952). On the rate of gain of information. *Quarterly Journal of Experimental Psychology*. 4, 11-26.
- Hyman R. (1953). Stimulus information as a determinant of reaction time. *Journal of experimental psychology*. 45, 188.
- Johanson AM. (1922). The influence of incentive and punishment upon reaction-time. *Archives of psychology*. 8, 53.
- Jones HE. (1937). Reaction-time and motor development. *The American Journal of Psychology*. 50, 181-94.
- Jorm AF, Anstey KJ, Christensen H, Rodgers B. (2004). Gender differences in cognitive abilities: The mediating role of health state and health habits. *Intelligence*. 32, 7-23.
- Kleitman N, Titelbaum S, Feiveson P. (1938). The effect of body temperature on reaction time. *American Journal of Physiology-Legacy Content*. 121, 495-501.

- Klemmer ET. (1957). Simple reaction time as a function of time uncertainty. *Journal of experimental psychology*. 54, 195.
- Kumar BA, Shikha D, Sudarsan B. (2010). Reaction time with respect to the nature of stimulus and age of male subjects. *Journal of sport and health research*. 2, 35-40.
- Lefcourt HM, Siegel JM. (1970). Reaction-time behaviour as a function of internal-external control of reinforcement and control of test administration. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement*. 2, 253.
- Leonard JA. (1959). Tactual choice reactions: I. *Quarterly Journal of Experimental Psychology*. 11, 76-83.
- Lorenzo I, Ramos J, Arce C, Guevara MA, Corsi-Cabrera M. (1995). Effect of total sleep deprivation on reaction time and waking EEG activity in man. *Sleep*. 18, 346-354.
- Merkel J. (1885). Die zeitlichen verhältnisse der willensthatigkeit. *Philos Stud*. 2, 73-127.
- Obersteiner H. (1874). Über eine neue einfache Methode zur Bestimmung der psychischen Leistungsfähigkeit des Gehirnes Geisteskranker. *Virchows Archiv*. 59, 427-458.
- Patil S, Phatale S. (2015). Auditory and Visual Reaction Time-A Tool for Early Detection of Neuropathy in Diabetics. *International Journal of Health Sciences and Research*. 5, 141-146.
- Ponsford J, Kinsella G. (1992). Attentional deficits following closed-head injury. *Journal of Clinical and Experimental Neuropsychology*. 14, 822-838.
- Puts NA, Wodka EL, Tommerdahl M, Mostofsky SH, Edden RA. (2014). Impaired tactile processing in children with autism spectrum disorder. *Journal of Neurophysiology*. 111, 1803-1811.
- Reed TE, Vernon PA, Johnson AM. (2004). Sex difference in brain nerve conduction velocity in normal humans. *Neuropsychologia*. 42, 1709-1714.
- Richerson SJ, Robinson CJ, Shum J. (2005). A comparative study of reaction times between type II diabetics and non-diabetics. *Biomedical engineering online*. 4, 12.
- Ruesch J. (1944). Dark adaptation, negative after images, tachistoscopic examinations and reaction time in head injuries. *Journal of Neurosurgery*. 1, 243-251.
- Sarno S, Erasmus LP, Lipp B, Schlaegel W. (2003). Multisensory integration after traumatic brain injury: a reaction time study between pairings of vision, touch and audition. *Brain Injury*. 17, 413-426.
- Schilling W. (1921). The effect of caffeine and acetanilide on simple reaction time. *Psychological Review*. 28, 72.
- Seashore RH, Starmann RA, Kendall WE, Helmick JS. (1941). Group factors in simple and discriminative reaction times. *Journal of Experimental Psychology*. 29, 346.
- Sherwood DE, Selzer DJ. (1979). Cardiorespiratory health, reaction time and aging. *Medicine and science in sports*. 11, 186-189.
- Smith A, Sturgess W, Richi N, Brice C, Collison C, Bailey J, et al. (1999). The effects of idazoxan on reaction times, eye movements and the mood of healthy volunteers and patients with upper respiratory tract illnesses. *Journal of psychopharmacology*. 13, 148-151.
- Spence C, Lloyd D, McGlone F, Nicholls ME, Driver J. (2000). Inhibition of return is supramodal: a demonstration between all possible pairings of vision, touch, and audition. *Experimental Brain Research*. 134, 42-48.

- Stuss DT, Stethem LL, Hugenholtz H, Picton T, Pivik J, Richard MT. (1989). Reaction time after head injury: fatigue, divided and focused attention, and consistency of performance. *Journal of Neurology, Neurosurgery & Psychiatry*. 52, 742-748.
- Taimela S, Kujala UM, Osterman K. (1991). The relation of low grade mental ability to fractures in young men. *International orthopaedics*. 15, 75-77.
- Tamm L, Narad ME, Antonini TN, O'Brien KM, Hawk LW, Epstein JN. (2012). Reaction time variability in ADHD: a review. *Neurotherapeutics*. 9, 500-508.
- Thompson HB. (1905). *The mental traits of sex: An experimental investigation of the normal mind in men and women*. Chicago: The University of Chicago Press.
- Tuttle WW, Brown, TT. (1926). Studies in reaction time, *American Journal of Physiology*. 78, 150-157.
- Van Zomeren AH, Deelman BG. (1976). Differential effects of simple and choice reaction after closed head injury. *Clinical Neurology and Neurosurgery*. 79, 81-90.
- Warden DL, Bleiberg J, Cameron KL, Ecklund J, Walter J, et al. (2001). Persistent prolongation of simple reaction time in sports concussion. *Neurology*. 57, 524-6.
- Wells GR. (1913). The influence of stimulus duration on reaction time. *The Psychological Monographs*. 5, i.
- Westerlund JH, Tuttle WW. (1931). Relationship between running events in track and reaction time. *Research Quarterly*. American Physical Education Association. 2, 95-100.
- Willison J, Tombaugh TN. (2006). Detecting simulation of attention deficits using reaction time tests. *Archives of Clinical Neuropsychology*. 21, 41-52.
- Yazdi SM, Sharifian A, Dehghani-Beshne M, Momeni VR, Aminian O. (2011). Effects of fluoride on psychomotor performance and memory of aluminum potroom workers. *Fluoride*. 44, 158-62.
- Zahn TP, Mirsky AF. (1999). Reaction time indicators of attention deficits in closed head injury. *Journal of Clinical and Experimental Neuropsychology*. 21, 352-67.