Statistical Power of the t Test for Two Independent Samples

(Two-Tailed Test, α = .05)

n	Cohen's *d*																			
	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.90	1.00	1.10	1.12	1.30	1.40	1.50
3	.05	.05	.05	.06	.06	.06	.06	.06	.07	.07	.07	.08	.08	.09	.11	.12	.14	.16	.18	.21
4	.05	.06	.06	.06	.07	.07	.08	.08	.09	.10	.10	.11	.12	.15	.17	.21	.24	.29	.33	.38
5	.06	.06	.06	.07	.08	.08	.09	.10	.11	.12	.14	.15	.17	.20	.25	.30	.35	.41	.47	.53
6	.06	.06	.07	.08	.09	.10	.11	.12	.14	.15	.17	.19	.21	.26	.32	.38	.44	.51	.58	.64
7	.06	.07	.07	.08	.10	.11	.12	.14	.16	.18	.20	.23	.26	.32	.38	.45	.53	.60	.67	.73
8	.06	.07	.08	.09	.11	.12	.14	.16	.18	.21	.24	.27	.30	.37	.44	.52	.60	.67	.74	.80
9	.07	.07	.09	.10	.12	.13	.16	.18	.21	.24	.27	.30	.34	.42	.50	.58	.66	.73	.80	.85
10	.07	.08	.09	.11	.13	.15	.17	.20	.23	.26	.30	.34	.38	.47	.55	.64	.72	.78	.84	.89
11	.07	.08	.10	.11	.14	.16	.19	.22	.25	.29	.33	.37	.42	.51	.60	.69	.76	.83	.88	.92
12	.07	.09	.10	.12	.15	.17	.20	.24	.28	.32	.36	.41	.46	.55	.64	.73	.80	.86	.91	.94
13	.07	.09	.11	.13	.16	.19	.22	.26	.30	.34	.39	.44	.49	.59	.68	.77	.84	.89	.93	.95
14	.08	.09	.11	.14	.17	.20	.24	.28	.32	.37	.42	.47	.52	.63	.72	.80	.86	.91	.94	.97
15	.08	.10	.12	.15	.18	.21	.25	.30	.34	.40	.45	.50	.56	.66	.75	.83	.89	.93	.96	.98
16	.08	.10	.12	.15	.19	.23	.27	.32	.37	.42	.48	.53	.59	.69	.78	.85	.91	.94	.97	.98
17	.08	.10	.13	.16	.20	.24	.28	.33	.39	.44	.50	.56	.62	.72	.81	.87	.92	.96	.98	.99
18	.09	.11	.14	.17	.21	.25	.30	.35	.41	.47	.53	.59	.64	.75	.83	.89	.94	.96	.98	.99
19	.09	.11	.14	.18	.22	.26	.32	.37	.43	.49	.55	.61	.67	.77	.85	.91	.95	.97	.99	.99
20	.09	.12	.15	.18	.23	.28	.33	.39	.45	.51	.57	.63	.69	.79	.87	.92	.96	.98	.99	
21	.09	.12	.15	.19	.24	.29	.35	.41	.47	.53	.60	.66	.71	.81	.89	.93	.97	.98	.99	
22	.10	.12	.16	.20	.25	.30	.36	.42	.49	.55	.62	.68	.74	.83	.90	.94	.97	.99	.99	
23	.10	.13	.16	.21	.26	.31	.38	.44	.51	.57	.64	.70	.76	.85	.91	.95	.98	.99		
24	.10	.13	.17	.21	.27	.33	.39	.46	.53	.59	.66	.72	.77	.86	.92	.96	.98	.99		
30	.12	.15	.20	.26	.33	.40	.47	.55	.63	.70	.76	.81	.86	.93	.97	.99	.99			
40	.14	.19	.26	.34	.42	.51	.60	.68	.75	.82	.87	.91	.94	.98	.99					
50	.17	.23	.31	.41	.51	.60	.70	.78	.84	.90	.93	.96	.98	.99						
60	.19	.27	.37	.47	.58	.69	.78	.85	.90	.94	.97	.98	.99							
70	.22	.31	.42	.54	.65	.75	.84	.90	.94	.97	.98	.99								
80	.24	.35	.47	.59	.71	.81	.88	.93	.96	.98	.99									
90	.26	.38	.52	.65	.76	.85	.92	.96	.98	.99										
100	.29	.42	.56	.69	.80	.89	.94	.97	.99											

Statistical Power of the t Test for Two Independent Samples

(Two-Tailed Test, α = .01)

n	Cohen's *d*																			
	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.90	1.00	1.10	1.20	1.30	1.40	1.50
3	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02	.02	.02	.02	.03
4	.01	.01	.01	.01	.01	.01	.01	.02	.02	.02	.02	.02	.02	.03	.03	.04	.05	.06	.07	.08
5	.01	.01	.01	.01	.02	.02	.02	.02	.02	.03	.03	.03	.04	.05	.06	.07	.09	.12	.14	.18
6	.01	.01	.01	.02	.02	.02	.02	.03	.03	.03	.04	.05	.05	.07	.09	.12	.15	.19	.24	.29
7	.01	.01	.02	.02	.02	.02	.03	.03	.04	.05	.05	.06	.07	.10	.13	.17	.22	.27	.34	.40
8	.01	.02	.02	.02	.02	.03	.03	.04	.05	.06	.07	.08	.10	.13	.17	.23	.29	.36	.43	.51
9	.01	.02	.02	.02	.03	.03	.04	.05	.06	.07	.09	.10	.12	.16	.22	.28	.36	.44	.52	.60
10	.01	.02	.02	.03	.03	.04	.05	.06	.07	.09	.10	.12	.15	.20	.26	.34	.42	.51	.60	.68
11	.02	.02	.02	.03	.04	.04	.06	.07	.08	.10	.12	.15	.17	.24	.31	.40	.49	.58	.67	.75
12	.02	.02	.03	.03	.04	.05	.06	.08	.10	.12	.14	.17	.20	.27	.36	.45	.55	.64	.73	.80
13	.02	.02	.03	.04	.04	.06	.07	.09	.11	.13	.16	.19	.23	.31	.40	.50	.60	.70	.78	.84
14	.02	.02	.03	.04	.05	.06	.08	.10	.12	.15	.18	.22	.26	.35	.45	.55	.65	.74	.82	.88
15	.02	.02	.03	.04	.05	.07	.09	.11	.14	.17	.20	.24	.29	.38	.49	.60	.70	.78	.85	.91
16	.02	.03	.03	.04	.06	.08	.10	.12	.15	.18	.22	.27	.31	.42	.53	.64	.74	.82	.88	.93
17	.02	.03	.04	.05	.06	.08	.10	.13	.17	.20	.25	.29	.34	.45	.57	.68	.77	.85	.91	.94
18	.02	.03	.04	.05	.07	.09	.11	.14	.18	.22	.27	.32	.37	.49	.61	.71	.81	.88	.92	.96
19	.02	.03	.04	.06	.07	.10	.12	.16	.20	.24	.29	.34	.40	.52	.64	.75	.83	.90	.94	.97
20	.02	.03	.04	.06	.08	.10	.13	.17	.21	.26	.31	.37	.43	.55	.67	.78	.86	.92	.95	.98
21	.02	.03	.05	.06	.08	.11	.14	.18	.23	.28	.33	.39	.46	.58	.70	.80	.88	.93	.96	.98
22	.02	.03	.05	.07	.09	.12	.15	.19	.24	.30	.35	.42	.48	.61	.73	.83	.90	.94	.97	.99
23	.03	.04	.05	.07	.09	.12	.16	.21	.26	.31	.38	.44	.51	.64	.76	.85	.91	.95	.98	.99
24	.03	.04	.05	.07	.10	.13	.17	.22	.27	.33	.40	.46	.53	.67	.78	.87	.93	.96	.98	.99
30	.03	.05	.07	.10	.13	.18	.24	.30	.37	.44	.52	.59	.67	.79	.88	.94	.97	.99		
40	.04	.07	.10	.14	.20	.27	.34	.43	.52	.60	.69	.76	.82	.91	.96	.99				
50	.05	.09	.13	.19	.27	.35	.45	.55	.65	.73	.81	.87	.91	.97	.99					
60	.07	.11	.17	.24	.33	.44	.55	.65	.75	.83	.89	.93	.96	.99						
70	.08	.13	.20	.29	.40	.52	.64	.74	.82	.89	.94	.96	.98							
80	.09	.15	.24	.35	.47	.59	.71	.81	.88	.93	.96	.98	.99							
90	.10	.18	.28	.40	.53	.66	.77	.86	.92	.96	.98	.99								
100	.12	.20	.32	.45	.59	.72	.82	.90	.95	.98	.99									

Statistical Power of the t Test for Two Independent Samples
(One-Tailed Test, α = .05)

n	Cohen's *d*																			
	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.90	1.00	1.10	1.20	1.30	1.40	1.50
3	.07	.07	.08	.08	.09	.09	.10	.11	.12	.13	.14	.15	.16	.18	.21	.24	.27	.31	.35	.39
4	.07	.08	.09	.10	.11	.12	.13	.14	.16	.17	.19	.21	.22	.26	.31	.36	.41	.46	.51	.57
5	.08	.09	.10	.11	.13	.14	.16	.18	.19	.21	.24	.26	.28	.34	.39	.45	.51	.58	.63	.69
6	.09	.10	.11	.13	.14	.16	.18	.21	.23	.25	.28	.31	.34	.40	.47	.54	.60	.67	.72	.77
7	.09	.11	.12	.14	.16	.18	.21	.23	.26	.29	.32	.36	.39	.46	.53	.61	.67	.74	.79	.84
8	.10	.11	.13	.15	.18	.20	.23	.26	.29	.33	.36	.40	.44	.52	.59	.67	.73	.79	.84	.88
9	.10	.12	.14	.17	.19	.22	.25	.29	.32	.36	.40	.44	.48	.56	.64	.72	.78	.84	.88	.91
10	.11	.13	.15	.18	.21	.24	.27	.31	.35	.39	.43	.48	.52	.61	.69	.76	.82	.87	.91	.94
11	.11	.13	.16	.19	.22	.26	.29	.33	.38	.42	.47	.51	.56	.65	.73	.80	.86	.90	.93	.96
12	.12	.14	.17	.20	.23	.27	.31	.36	.40	.45	.50	.55	.59	.68	.76	.83	.88	.92	.95	.97
13	.12	.15	.18	.21	.25	.29	.33	.38	.43	.48	.53	.58	.63	.72	.80	.86	.90	.94	.96	.98
14	.13	.15	.19	.22	.26	.31	.35	.40	.45	.51	.56	.61	.66	.75	.82	.88	.92	.95	.97	.98
15	.13	.16	.19	.23	.27	.32	.37	.42	.48	.53	.58	.64	.69	.77	.85	.90	.94	.96	.98	.99
16	.13	.17	.20	.24	.29	.34	.39	.44	.50	.56	.61	.66	.71	.80	.87	.92	.95	.97	.98	.99
17	.14	.17	.21	.25	.30	.35	.41	.46	.52	.58	.63	.69	.74	.82	.88	.93	.96	.98	.99	.99
18	.14	.18	.22	.26	.31	.37	.42	.48	.54	.60	.66	.71	.76	.84	.90	.94	.97	.98	.99	
19	.15	.18	.23	.27	.33	.38	.44	.50	.56	.62	.68	.73	.78	.86	.91	.95	.97	.99	.99	
20	.15	.19	.23	.28	.34	.40	.46	.52	.58	.64	.70	.75	.80	.87	.93	.96	.98	.99		
21	.15	.19	.24	.29	.35	.41	.47	.54	.60	.66	.72	.77	.82	.89	.94	.97	.98	.99		
22	.16	.20	.25	.30	.36	.43	.49	.56	.62	.68	.74	.79	.83	.90	.95	.97	.99	.99		
23	.16	.20	.26	.31	.37	.44	.51	.57	.64	.70	.75	.80	.85	.91	.95	.98	.99			
24	.16	.21	.26	.32	.39	.45	.52	.59	.65	.72	.77	.82	.86	.92	.96	.98	.99			
30	.19	.24	.31	.38	.45	.53	.60	.68	.74	.80	.85	.89	.92	.96	.98	.99				
40	.22	.29	.37	.46	.55	.64	.72	.79	.84	.89	.93	.95	.97	.99						
50	.26	.34	.44	.54	.63	.72	.80	.86	.91	.94	.97	.98	.99							
60	.29	.39	.49	.60	.70	.79	.86	.91	.95	.97	.98	.99								
70	.32	.43	.55	.66	.76	.84	.90	.94	.97	.98	.99									
80	.35	.47	.60	.71	.81	.88	.93	.96	.98	.99										
90	.38	.51	.64	.76	.85	.91	.95	.98	.99											
100	.41	.55	.68	.79	.88	.94	.97	.99	.99											

Statistical Power of the t Test for Two Independent Samples
(One-Tailed Test, α = .01)

n	Cohen's *d*																			
	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.90	1.00	1.10	1.20	1.30	1.40	1.50
3	.01	.01	.01	.01	.02	.02	.02	.02	.02	.02	.02	.02	.03	.03	.03	.04	.04	.05	.06	.06
4	.01	.02	.02	.02	.02	.02	.03	.03	.03	.03	.04	.04	.05	.06	.07	.08	.10	.12	.14	.17
5	.02	.02	.02	.02	.03	.03	.03	.04	.04	.05	.06	.06	.07	.09	.11	.14	.17	.21	.26	.31
6	.02	.02	.02	.03	.03	.04	.04	.05	.06	.07	.08	.09	.10	.13	.16	.21	.25	.31	.37	.44
7	.02	.02	.03	.03	.04	.05	.05	.06	.07	.08	.10	.11	.13	.17	.22	.27	.34	.40	.48	.55
8	.02	.03	.03	.04	.04	.05	.06	.07	.09	.10	.12	.14	.16	.21	.27	.34	.41	.49	.57	.64
9	.02	.03	.03	.04	.05	.06	.07	.09	.10	.12	.14	.17	.19	.25	.33	.40	.49	.57	.65	.72
10	.02	.03	.04	.05	.06	.07	.08	.10	.12	.14	.17	.20	.23	.30	.38	.46	.55	.64	.71	.78
11	.03	.03	.04	.05	.06	.08	.10	.12	.14	.16	.19	.23	.26	.34	.43	.52	.61	.70	.77	.83
12	.03	.04	.04	.06	.07	.09	.11	.13	.16	.18	.22	.25	.29	.38	.48	.57	.66	.75	.82	.87
13	.03	.04	.05	.06	.08	.10	.12	.14	.17	.21	.24	.28	.33	.42	.52	.62	.71	.79	.85	.90
14	.03	.04	.05	.07	.08	.10	.13	.16	.19	.23	.27	.31	.36	.46	.57	.67	.75	.83	.88	.93
15	.03	.04	.06	.07	.09	.11	.14	.17	.21	.25	.29	.34	.39	.50	.61	.71	.79	.86	.91	.94
16	.03	.05	.06	.08	.10	.12	.15	.19	.23	.27	.32	.37	.42	.53	.64	.74	.82	.88	.93	.96
17	.04	.05	.06	.08	.10	.13	.16	.20	.24	.29	.34	.40	.45	.57	.68	.77	.85	.91	.94	.97
18	.04	.05	.07	.09	.11	.14	.18	.22	.26	.31	.37	.42	.48	.60	.71	.80	.87	.92	.96	.98
19	.04	.05	.07	.09	.12	.15	.19	.23	.28	.33	.39	.45	.51	.63	.74	.83	.89	.94	.97	.98
20	.04	.05	.07	.10	.13	.16	.20	.25	.30	.36	.42	.48	.54	.66	.77	.85	.91	.95	.97	.99
21	.04	.06	.08	.10	.13	.17	.21	.26	.32	.38	.44	.50	.57	.69	.79	.87	.92	.96	.98	.99
22	.04	.06	.08	.11	.14	.18	.23	.28	.34	.40	.46	.53	.59	.71	.81	.89	.94	.97	.98	.99
23	.04	.06	.08	.11	.15	.19	.24	.29	.35	.42	.48	.55	.62	.74	.83	.90	.95	.97	.99	.99
24	.05	.06	.09	.12	.16	.20	.25	.31	.37	.44	.51	.57	.64	.76	.85	.92	.96	.98	.99	
30	.06	.08	.11	.15	.20	.26	.33	.40	.47	.55	.62	.69	.76	.86	.93	.97	.99	.99		
40	.07	.11	.15	.21	.28	.36	.44	.53	.62	.70	.77	.83	.88	.95	.98	.99				
50	.09	.13	.19	.27	.36	.45	.55	.65	.74	.81	.87	.92	.95	.98						
60	.10	.16	.24	.33	.43	.54	.65	.74	.82	.88	.93	.96	.98	.99						
70	.12	.19	.28	.39	.51	.62	.73	.82	.88	.93	.96	.98	.99							
80	.14	.22	.33	.45	.57	.69	.79	.87	.92	.96	.98	.99								
90	.16	.25	.37	.50	.63	.75	.84	.91	.95	.98	.99									
100	.18	.28	.41	.55	.69	.80	.88	.94	.97	.99										