sTable 1. Longitudinal studies of neuropsychological functioning in first episode psychosis. Included are studies with or without a comparison groups with a follow-up durations of at least one year.

Study	N (Subjects)	Length of follow-up	Summary of findings
Scottish Schizophrenia Research Group (1988)(1)	28 FE patients	1 year	**Improvement** on Raven's Progressive Matrices, Block Design and Digit copying; **No change** on Vocabulary and Similarities
Hoff et al. (1991)(2)	15 FE patients	2 years	**Improvement** on Executive, Concentration/Speed and Global scales
Bilder et al. (1991)(3)	28 FE patients	1 year	High **stability** of test scores overall; **Improvement** on tests of attentional, motor, and memory functions; **Decline** on Digit Span
Sweeney et al. (1991)(4)	15 FE patients	1 year	**Improvement** on psychomotor (Trails A and B, Digit Symbol and Finger Tapping), Judgment of Line Orientation and Rey AVLT tests. **No change** on Digit Span, Block Design, verbal fluency, verbal learning/recall and immediate/delayed visual memory.
Nopoulos et al. (1994)(5)	35 FE patients	1 (n=17)/2 (n=18) years	**No change** on most neuropsychological scores; **Improvement** on Trails B, Stroop Colored Dots and Stroop Interference.
Censits et al. (1997)(6)	30 FE patients	19 months	**Stable** performance on all neuropsychological tests.
Hoff et al. (1999)(7)	42 FE patients 16 healthy controls	3.6 years (FE), 3.8 (HC)	Patients showed **no improvement** on verbal memory and sensory-perceptual domains compared to controls and showed **deterioration** in verbal memory.
Gold et al. (1999)(8)	21 FE patients 33 recent onset patients	5 years	**Improvement** on performance IQ, full-scale IQ, letter-cancellation, logical memory free recall, WCST categories; **Decline** in finger tapping.
Hofer et al. (2000)(9)	16 FE patients	1 year	**Normalization** of neuropsychological performance over time.
Purdon et al. (2000)(10)	55 FE patients	1 year	**Improvement** or **stability** on all neuropsychological tests.
Albus et al. (2002)(11)	50 FE patients 50 healthy controls	2 years	**Improvement** in verbal learning; **No change** in semantic memory, visual-motor processing and attention, and abstraction/flexibility; **Deterioration** in visual memory.
Townsend et al. (2002)(12)	83 FE patients	1 year	**Improvement** on verbal and performance IQ, measures of verbal comprehension, perceptual organization, working memory, visual memory, auditory memory, WCST, Trails-A, CPT, word fluency; **No change** on Stroop and Trails-B.
Stirling et al. (2003)(13)	24 FE patients	10.6 years	**Decline** in performance on three out of nine tests: object assembly, picture completion, and memory for design. **Stable** performance on measures of executive/frontal function.
Hill et al. (2004)(14)	45 FE patients 33 healthy controls	1-2 years	**No change** in executive functions, motor skills; **Less improvement** than controls in attention and verbal memory; **Improvement** in visual memory and visual perception compared to controls.
Hoff et al. (2005)(15)	21 FE patients 8 healthy controls	10 years	**High stability** on most neuropsychological tests; **Improvement** in Verbal IQ, Stroop Color Word and Finger Tapping in both patients and controls; **Greater improvement** in patients compared to controls in Visual Reproduction-Immediate.

sTable 1. Cont.

Study	N (Subjects)	Length of follow-up	Summary of findings
Addington et al. (2005)(16)	105 FE patients 66 healthy controls	Patients: 1,2 and 3 years HC: 1 year	**Improvement** in patients over three years in several tests, but **failure to improve** during the first year on verbal fluency, visual memory, trails A and the Stroop, compared to controls who did improve. Controls failed to improve on the RAVLT, letter-number, WCST and Pegboard-dominant.
Albus et al. (2006)(17)	71 FE patients 71 healthy controls	5 years	Both groups showed **stability** or **improvement** in the majority of cognitive domains. Patients showed **deterioration** in verbal fluency while controls improved, as well as a trend towards **less improvement** in semantic memory and retention rate compared to controls.
Keefe et al. (2006)(18)	58 and 26 FE patients	1 and 2 years	**Improvement** in attention, processing speed, verbal memory and working memory.
Kopala et al. (2006)(19)	20 FE patients	2 years	**Improvement** on measures of verbal learning, verbal fluency, attention, and executive function.
Keefe et al. (2007)(20)	81 FE patients	1 year	**Improvement** across neuropsychological tests.
Rund et al. (2007)(21)	138 FE patients (1 year) 111 FE patients (2 years)	1 and 2 years	**Improvement** in working memory and verbal learning dimensions.
Rodriguez-Sanchez et al. (2008)(22)	112 FE patients 22 healthy controls	1 year	Equivalent **improvement** in patients and controls in all cognitive domains, except verbal memory where controls showed greater improvement than controls.
Mayoral et al. (2008)(23)	22 FE patients 29 healthy controls	2 years	Patients and controls showed **improvement** in global cognitive performance and attention, and **no change** in working memory. Patients, but not controls showed **improvement** in learning and memory, and **no change** in executive function. Controls, but not patients, showed **improvement** in executive function, and **no change** in learning and memory.
Zipparo et al. (2008)(24)	32 FE patients	2-3 years	**Stability** on the majority of cognitive tests; **Improvement** in full-scale and performance IQ, and visual memory; A trend towards **decline** in verbal knowledge, attention and visuospatial ability.
Crespo-Facorro et al. (2009)(25)	104 FE patients 37 healthy controls	1 year	Patients, but not controls, showed **improvement** on measures of motor speed, executive function and long-term recall; Similar **improvement** in patients and controls on all other cognitive measures.
Leeson et al. (2009)(26)	104 FE patients 25 healthy controls	1 and 3 years	Patients showed **deterioration** in attentional set shifting task performance from baseline to 1 year, but no difference between baseline and 3 or 6 years; Controls showed **no change** over time.
	31 FE patients	6 years	
de Mello Ayres et al. (2010)(27)	56 FE patients 70 healthy controls	1.6 years (patients), 1.9 years (controls)	Similar **improvement** on digit span forward, digit span backward, and verbal fluency in patients and controls.

sTable 1. Cont.

Study	N (Subjects)	Length of follow-up	Summary of findings
Popolo et al. (2010)(28)	15 FE patients	1 year	**No significant change** over time.
Leeson et al. (2011)(29)	78 FE patients 27 healthy controls	1 year	Patients with normal IQ at baseline showed similar IQ **improvement** as controls; patients with low IQ at baseline showed **less improvement** than other patients and controls; All patients showed similar **improvement** in memory and executive function as controls.
	60 FE patients 27 healthy controls	3 years	
Liu et al. (2011)(30)	31 FE patients	1 and 3 years	**Stability** and **improvement** on measures of executive function.
Barder et al. (2012)(31)	62 FE patients	1, 2 and 5 years	**Improvement** in working memory and impulsivity in the first two years, followed by **no change** over the next three years; **Decrease** in motor speed from 2 to 5 years; **No change** in verbal learning and executive function.
Ayesa-Arriola et al. (2013)(32)	79 FE patients 41 healthy controls	3 years	Patients and controls showed **improvement** in most cognitive scores; Less improvement in patients compared to controls on measures of verbal memory and processing speed.
Rodríguez-Sánchez et al. (2013)(33)	155 FE patients 43 healthy controls	3 years	**Increasing deviation** of patients from controls in measures of verbal and visual memory; **Similar improvement** in patients and controls on measures of motor dexterity and attention.
Chang et al. (2014)(34)	93 FE patients	1, 2 and 3 years	**Improvement** in measures of working memory, logical memory, visual reproduction and WCST; **No change** in category fluency.
Rund et al. (2015)(35)	167 FE patients (1 year) 159 FE patients (2 years) 101 FE patients (5 years) 114 FE patients (10 years)	1, 2, 5 and 10 years	**Stability** in composite score of neurocognitive function over time.
Amoretti et al. (2016)(36)	45 FE patients 41 healthy controls	2 years	**Improvement** in verbal memory and attention; measures of working memory and executive function remained **stable.**
Bergh et al. (2016)(37)	171 FE patients	5 and 10 years	Performance on cognitive tests (of executive function) **did not change** significantly over time.
Kenney et al. (2016)(38)	23 FE patients 21 healthy controls	4 years	Patients showed **less improvement** than controls on measures of processing speed and verbal learning; there were **no group difference in change** on the remaining cognitive metrics.
Labad et al. (2016)(39)	36 FE patients	1 year	Performance on cognitive tests (of processing speed, attention, working memory, verbal/visual learning and reasoning) **did not change** significantly over time.

References for sTable 1

1. The Scottish First Episode Schizophrenia Study V. One-year follow-up. The Scottish Schizophrenia Research Group. The British journal of psychiatry : the journal of mental science. 1988;152:470-476.
2. Hoff AL, Riordan H, O'Donnell DW, DeLisi LE. Cross-sectional and longitudinal neuropsychological test findings in first episode schizophrenic patients. Schizophrenia research. 1991;5:197-198.
3. Bilder RM, Lipschutz-Broch L, Reiter G, Stephen G, Mayerhoff D, Lieberman JA. 11. Neuropsychological deficits in the early course of first episode schizophrenia. Schizophrenia research. 1991;5:198-199.
4. Sweeney JA, Haas GL, Keilp JG, Long M. Evaluation of the stability of neuropsychological functioning after acute episodes of schizophrenia: one-year followup study. Psychiatry research. 1991;38:63-76.
5. Nopoulos P, Flashman L, Flaum M, Arndt S, Andreasen N. Stability of cognitive functioning early in the course of schizophrenia. Schizophrenia research. 1994;14:29-37.
6. Censits DM, Ragland JD, Gur RC, Gur RE. Neuropsychological evidence supporting a neurodevelopmental model of schizophrenia: a longitudinal study. Schizophrenia research. 1997;24:289-298.
7. Hoff AL, Sakuma M, Wieneke M, Horon R, Kushner M, DeLisi LE. Longitudinal neuropsychological follow-up study of patients with first-episode schizophrenia. American Journal of Psychiatry. 1999;156:1336-1341.
8. Gold S, Arndt S, Nopoulos P, O'Leary DS, Andreasen NC. Longitudinal study of cognitive function in first-episode and recent-onset schizophrenia. American Journal of Psychiatry. 1999;156:1342-1348.
9. Hofer H, Merlo M. Neuropsychological performance in first episode patients: Evidence for normalization of cognitive functioning. Schizophrenia research. 2000;41:269.
10. Purdon SE, Jones BD, Stip E, Labelle A, Addington D, David SR, Breier A, Tollefson GD. Neuropsychological change in early phase schizophrenia during 12 months of treatment with olanzapine, risperidone, or haloperidol. Archives of general psychiatry. 2000;57:249-258.
11. Albus M, Hubmann W, Scherer J, Dreikorn B, Hecht S, Sobizack N, Mohr F. A prospective 2-year follow-up study of neurocognitive functioning in patients with first-episode schizophrenia. European archives of psychiatry and clinical neuroscience. 2002;252:262-267.
12. Townsend LA, Norman RM, Malla AK, Rychlo AD, Ahmed RR. Changes in cognitive functioning following comprehensive treatment for first episode patients with schizophrenia spectrum disorders. Psychiatry research. 2002;113:69-81.
13. Stirling J, White C, Lewis S, Hopkins R, Tantam D, Huddy A, Montague L. Neurocognitive function and outcome in first-episode schizophrenia: a 10-year follow-up of an epidemiological cohort. Schizophrenia research. 2003;65:75-86.
14. Hill SK, Schuepbach D, Herbener ES, Keshavan MS, Sweeney JA. Pretreatment and longitudinal studies of neuropsychological deficits in antipsychotic-naıve patients with schizophrenia. Schizophrenia research. 2004;68:49-63.
15. Hoff AL, Svetina C, Shields G, Stewart J, DeLisi LE. Ten year longitudinal study of neuropsychological functioning subsequent to a first episode of schizophrenia. Schizophrenia research. 2005;78:27-34.
16. Addington J, Saeedi H, Addington D. The course of cognitive functioning in first episode psychosis: changes over time and impact on outcome. Schizophrenia research. 2005;78:35-43.
17. Albus M, Hubmann W, Mohr F, Hecht S, Hinterberger-Weber P, Seitz N-N, Küchenhoff H. Neurocognitive functioning in patients with first-episode schizophrenia. European archives of psychiatry and clinical neuroscience. 2006;256:442.

18. Keefe RS, Seidman LJ, Christensen BK, Hamer RM, Sharma T, Sitskoorn MM, Rock SL, Woolson S, Tohen M, Tollefson GD. Long-term neurocognitive effects of olanzapine or low-dose haloperidol in first-episode psychosis. Biological psychiatry. 2006;59:97-105.
19. Kopala LC, Good KP, Milliken H, Buiteman C, Woodley H, Rui Q, Whitehorn D, Love L, Balshaw R, Kiss I. Treatment of a first episode of psychotic illness with quetiapine: an analysis of 2 year outcomes. Schizophrenia research. 2006;81:29-39.
20. Keefe RS, Sweeney JA, Gu H, Hamer RM, Perkins DO, McEvoy JP, Lieberman JA. Effects of olanzapine, quetiapine, and risperidone on neurocognitive function in early psychosis: a randomized, double-blind 52-week comparison. American Journal of Psychiatry. 2007;164:1061-1071.
21. Rund BR, Melle I, Friis S, Johannessen JO, Larsen TK, Midbøe LJ, Opjordsmoen S, Simonsen E, Vaglum P, McGlashan T. The course of neurocognitive functioning in first-episode psychosis and its relation to premorbid adjustment, duration of untreated psychosis, and relapse. Schizophrenia research. 2007;91:132-140.
22. Rodríguez-Sánchez JM, Pérez-Iglesias R, González-Blanch C, Pelayo-Terán JM, Mata I, Martínez O, Sánchez-Cubillo I, Vázquez-Barquero JL, Crespo-Facorro B. 1-year follow-up study of cognitive function in first-episode non-affective psychosis. Schizophrenia research. 2008;104:165-174.
23. Mayoral M, Zabala A, Robles O, Bombin I, Andres P, Parellada M, Moreno D, Graell M, Medina O, Arango C. Neuropsychological functioning in adolescents with first episode psychosis: a two-year follow-up study. European Psychiatry. 2008;23:375-383.
24. Zipparo L, Whitford TJ, Hodge MAR, Lucas S, Farrow TF, Brennan J, Gomes L, Williams LM, Harris AW. Investigating the neuropsychological and neuroanatomical changes that occur over the first 2–3 years of illness in patients with first-episode schizophrenia. Progress in Neuro-Psychopharmacology and Biological Psychiatry. 2008;32:531-538.
25. Crespo-Facorro B, Rodriguez-Sanchez JM, Perez-Iglesias R, Mata I, Ayesa R, Ramirez-Bonilla M, Martínez-Garcia O, Vázquez-Barquero JL. Neurocognitive effectiveness of haloperidol, risperidone, and olanzapine in first-episode psychosis: a randomized, controlled 1-year follow-up comparison. The Journal of clinical psychiatry. 2009;70:717-729.
26. Leeson VC, Robbins TW, Matheson E, Hutton SB, Ron MA, Barnes TR, Joyce EM. Discrimination learning, reversal, and set-shifting in first-episode schizophrenia: stability over six years and specific associations with medication type and disorganization syndrome. Biological psychiatry. 2009;66:586-593.
27. de Mello Ayres A, Scazufca M, Menezes PR, Nakano EY, Regina ACB, Schaufelberger MS, Murray RM, McGuire PK, Rushe T, Busatto GF. Cognitive functioning in subjects with recent-onset psychosis from a low-middle-income environment: multiple-domain deficits and longitudinal evaluation. Psychiatry research. 2010;179:157-164.
28. Popolo R, Vinci G, Balbi A. Cognitive function, social functioning and quality of life in first-episode psychosis: A 1-year longitudinal study. International journal of psychiatry in clinical practice. 2010;14:33-40.
29. Leeson VC, Sharma P, Harrison M, Ron MA, Barnes TR, Joyce EM. IQ trajectory, cognitive reserve, and clinical outcome following a first episode of psychosis: a 3-year longitudinal study. Schizophrenia bulletin. 2011;37:768-777.
30. Liu KC, Chan RC, Chan KK, Tang JY, Chiu CP, Lam MM, Chan SK, Wong GH, Hui CL, Chen EY. Executive function in first-episode schizophrenia: a three-year longitudinal study of an ecologically valid test. Schizophrenia research. 2011;126:87-92.
31. Barder HE, Sundet K, Rund BR, Evensen J, Haahr U, ten Velden Hegelstad W, Joa I, Johannessen JO, Langeveld H, Larsen TK, Melle I, Opjordsmoen S, Røssberg JI, Simonsen E, Vaglum P, McGlashan T, Friis S. Neurocognitive development in first episode psychosis 5 years follow-up: Associations between illness severity and cognitive course. Schizophrenia research. 2013;149:63-69.
32. Ayesa-Arriola R, Rodríguez-Sánchez JM, Pérez-Iglesias R, Roiz-Santiáñez R, Martínez-García O, Sánchez-Moreno J, Tabarés-Seisdedos R, Vázquez-Barquero JL, Crespo-Facorro B. Long-term (3-year) neurocognitive effectiveness of antipsychotic medications

in first-episode non-affective psychosis: a randomized comparison of haloperidol, olanzapine, and risperidone. Psychopharmacology. 2013;227:615-625.
33. Rodríguez-Sánchez JM, Ayesa-Arriola R, Pérez-Iglesias R, Periañez JA, Martinez-Garcia O, Gomez-Ruiz E, Tabares-Seisdedos R, Crespo-Facorro B. Course of cognitive deficits in first episode of non-affective psychosis: a 3-year follow-up study. Schizophrenia research. 2013;150:121-128.
34. Chang WC, Hui CLM, Chan SKW, Lee EHM, Wong GHY, Chen EYH. Relationship between diminished expression and cognitive impairment in first-episode schizophrenia: A prospective three-year follow-up study. Schizophrenia research. 2014;152:146-151.
35. Rund BR, Barder HE, Evensen J, Haahr U, ten Velden Hegelstad W, Joa I, Johannessen JO, Langeveld J, Larsen TK, Melle I. Neurocognition and duration of psychosis: a 10-year follow-up of first-episode patients. Schizophrenia bulletin. 2015:sbv083.
36. Amoretti S, Bernardo M, Bonnin CM, Bioque M, Cabrera B, Mezquida G, Solé B, Vieta E, Torrent C. The impact of cognitive reserve in the outcome of first-episode psychoses: 2-year follow-up study. European Neuropsychopharmacology. 2016;26:1638-1648.
37. Bergh S, Hjorthøj C, Sørensen HJ, Fagerlund B, Austin S, Secher RG, Jepsen JR, Nordentoft M. Predictors and longitudinal course of cognitive functioning in schizophrenia spectrum disorders, 10 years after baseline: The OPUS study. Schizophrenia research. 2016;175:57-63.
38. Kenney J, Anderson-Schmidt H, Scanlon C, Arndt S, Scherz E, McInerney S, McFarland J, Byrne F, Ahmed M, Donohoe G, Hallahan B, McDonald C, Cannon DM. Cognitive course in first-episode psychosis and clinical correlates: A 4 year longitudinal study using the MATRICS Consensus Cognitive Battery. Schizophrenia research. 2015;169:101-108.
39. Labad J, Barbero JD, Gutiérrez-Zotes A, Montalvo I, Creus M, Cabezas Á, Solé M, Algora MJ, Garcia-Parés G, Vilella E. Free thyroxine levels are associated with cognitive changes in individuals with a first episode of psychosis: A prospective 1-year follow-up study. Schizophrenia research. 2016;171:182-186.