

**Loftus J, Etain B, Scott J (2016) What can we learn from offspring studies in bipolar disorder? *BJPsych Advances*, 22, 176–185 (doi: 10.1192/apt.bp.114.013086)**

**DATA  
SUPPLEMENT**

**TABLE DS1** Cross-sectional studies of psychopathology in offspring of parents with bipolar disorder

First author	Study details	Key findings and observations in offspring
Klein (1985)	<i>n</i> =37 Mean age: 17.9 years (s.d.=1.9) Control group present	3% bipolar II disorder 24% cyclothymia 11% other affective disorders
Grigoriou-Serbanescu (1989)	<i>n</i> =72 Parents: bipolar I disorder Mean age: 13 years (s.d.=2.3) Control group present	20% non-bipolar affective and anxiety disorders 21% ADHD 11% conduct disorder
Chang (2000)	<i>n</i> =60 Uni-/bilineal families Mean age: 11 years (s.d.= 3.5) No control group	15% bipolar disorder/cyclothymia 55% Axis 1 disorder 15% affective disorder
Wals (2001)	<i>n</i> =140 Parents: bipolar I or II disorder Mean age: 16 years (s.d.=2.7) No control group	3% bipolar disorder 26% other affective disorders 11% anxiety 5% ADHD
Henin (2005)	<i>n</i> =117 Mean age: 13.6 years (s.d.=5.3) Control group present	33% morbidity rate for bipolar I disorder by age 18 25% depression in early childhood 63% anxiety disorders/ADHD/oppositional defiant disorder
Singh (2007)	<i>n</i> =37 Parents: bipolar I disorder 8% bilineal families Mean age: 10.2 years Control group present	38% bipolar spectrum disorders 78% Axis 1 disorder 31% ADHD 32% anxiety
Birmaher (2009)	<i>n</i> =388 Self-referral Mean age: 11.9 years (s.d.=3.6) Control group present	11% bipolar spectrum disorders 52% Axis 1 disorder 25% ADHD 2–3 increase in any mood and anxiety disorder Offspring in bilineal families 3–6 times more likely to have bipolar disorder
Birmaher (2010)	<i>n</i> =121 Self-referral (parents) Mean age: 3.8 years Control group present	2% bipolar disorder NOS 2.5% any mood disorder 11% anxiety disorder 26% Axis 1 disorder 16% ADHD
Vandeleur (2012)	<i>n</i> =139 Clinical sample (parents) Mean age: 11.6 years Control group present	2.3% bipolar spectrum disorders Cumulative risk rates for bipolar disorder: age <12 years = 28%; age <18 years = 64% Increased mood disorder in offspring in bilineal families Recurrent major depressive disorder associated with parental bipolar I and bipolar II disorder
Nurnberger (2011)	<i>n</i> =141 Age: 12–21 years Control group present	8% bipolar spectrum disorders 25% major affective disorders Anxiety/disruptive behavioural disorder predictive of major mood episode
Zappitelli (2011)	<i>n</i> =35 Mean age: 12.5 years Parents: bipolar I disorder No control group	8.6% bipolar spectrum disorders 20% major depressive disorder 60% ADHD 30% anxiety disorders

ADHD, attention-deficit hyperactivity disorder; NOS, not otherwise specified.

**TABLE DS2** Prospective studies of psychopathology in offspring of parents with bipolar disorder

First author	Study details	Key findings and observations in offspring
Akiskal (1985)	<i>n</i> =68 Parents/siblings Age: 6–24 years 3-year follow-up	8% mania and 4% mixed states 7% cyclothymia and 7% dysthymia No prepubertal onset of (hypo)mania >50% showed signs of bipolarity
Hammen (1990)	<i>n</i> =18 Age: 11–19 years Control group present	39% minor depression/dysthymia 33% anxiety disorders
Radke-Yarrow (1992)	<i>n</i> =44 Age: 5–11 years Control group present	38–61% mood and non-mood disorders
Carlson (1993)	<i>n</i> =132 Age: 7–17 years 2 control groups 3-year follow-up	4.8% bipolar disorder 47% showed major psychopathology Increased disruptive behaviour disorder/conduct disorder
Duffy (2010)	<i>n</i> =207 Age: 8–25 years Control group present 15-year follow-up	16% bipolar spectrum disorders (2.7% bipolar I disorder, 5.9% bipolar II disorder, 5.5% bipolar disorder NOS) 55% mood disorder 8.3% ADHD/learning difficulties No hypomania aged <14 years
Egeland (2012)	<i>n</i> =220 Parents: bipolar I disorder Mean age: 16 years Control group present 16-year follow-up	7% bipolar I disorder No prepubertal onset of mania Behaviour patterns by age: pre-school: increased sensitivity, crying, anxiety/worry, somatic complaints school: sad mood, decreased energy, decreased sleep, fearfulness adolescence: decreased concentration, high energy, excessive talking, depressed mood
Mesman (2013)	<i>n</i> =108 Age: 12–21 years 12-year follow-up No control group	13% bipolar spectrum disorders 3% bipolar I disorder; 8% bipolar II disorder 72% DSM-IV Axis 1 diagnosis 54% mood disorder 88% first episode was depression No prepubertal onset of (hypo)mania

ADHD, attention-deficit hyperactivity disorder.

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