

# Which young people will develop bipolar disorder?

**Philip Mitchell**

*School of Psychiatry, University of New South Wales;  
Black Dog Institute, Prince of Wales Hospital*



# Bipolar disorder in Australia

- ❑ Findings of 2007 Australian National Survey of Mental Health & Well-being
- ❑ Lifetime prevalence 1.3% (0.7% BPI; 0.6% BP II)
- ❑ 12-month prevalence 0.9% (0.5% BPI; 0.4% BP II)
- ❑ Most had never been in a long-term relationship (66%); or were divorced/separated (20%; 2.5 times those with depression)



**Mitchell, Johnston, Frankland et al  
(In preparation)**

# Bipolar disorder in Australia

- ❑ 16% were unemployed
- ❑ 36% were on government benefits (2.5 times those with depression).
- ❑ Unable or less able to carry out normal roles at work or home an average of 8 days per month
- ❑ 38% disabled for more than a week per month



**Mitchell, Johnston, Frankland et al  
(In preparation)**

# Bipolar disorder in Australia

- ❑ 9% reported at least one suicide attempt in the past 12 months (3.4 times those with depression)
- ❑ 28% reported at least one suicide attempt over their lifetime (2.6 times those with depression).



**Mitchell, Johnston, Frankland et al  
(In preparation)**

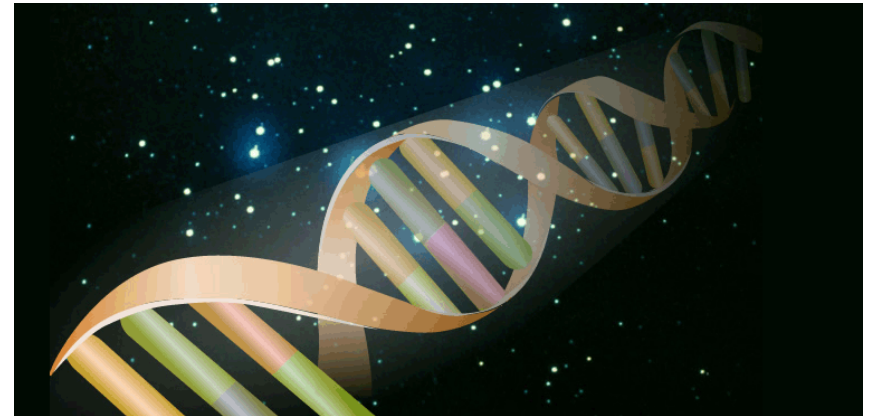
Doing fine ...  
Jamie Tancred with  
his daughters.  
Photo: Chris Elfes



*Sydney Morning Herald*  
February, 2008

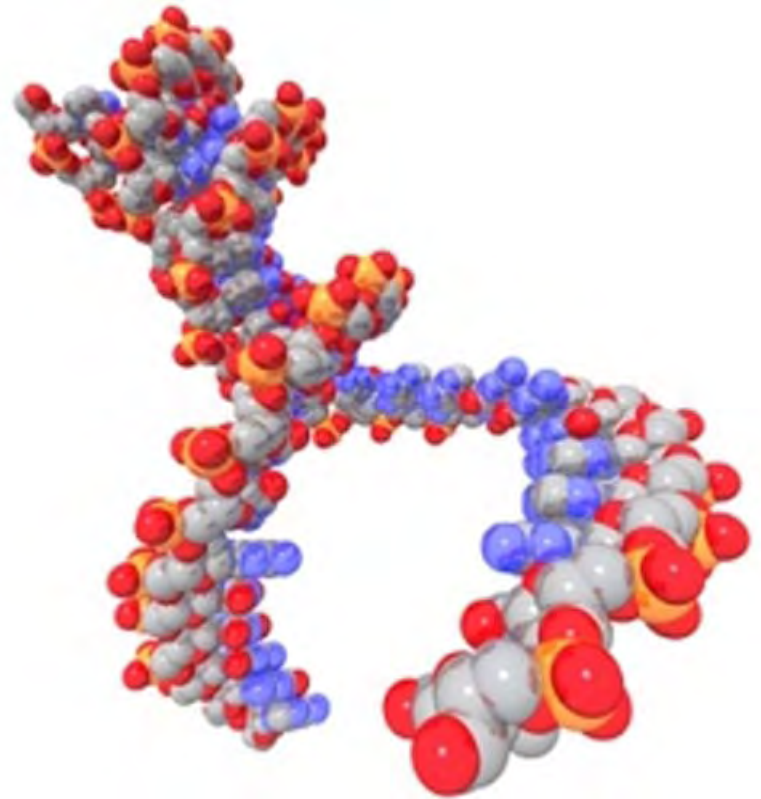
# Genetics and bipolar disorder

- ❑ Genetic factors account for at least 80% of the cause of bipolar disorder (McGuffin et al, 2003)
- ❑ Individuals with a first-degree relative (parent, child or sibling) with bipolar disorder are 10-14 times more likely to develop bipolar disorder than someone without such a family history (Mortensen et al, 2003)



# Genetics and bipolar disorder

- ❑ In absolute terms, 10-12% of first-degree relatives of a person with bipolar disorder develop this condition, while about 20% will have recurrent depression



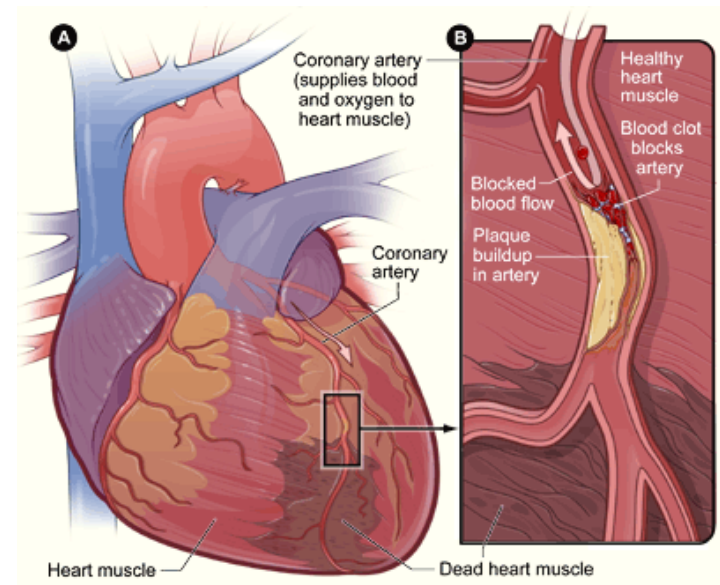
# Prevention and early intervention

- ❑ What factors determine which children or siblings will develop bipolar disorder and who will be resilient to this?
- ❑ Elucidation of such factors would enable development of rational preventive or early intervention programs



# Prevention and early intervention

- ❑ In general medicine, we have seen the benefits of prevention and early intervention
- ❑ For example, death rates from heart disease and stroke have reduced because of identification of risk factors (smoking, high blood pressure, cholesterol) and early intervention treatment programs



# Prevention and early intervention

- ❑ In mental health, early intervention programs for schizophrenia have been established internationally, focusing on those with early subtle (prodromal) presentations, or soon after the condition has developed



# Prevention and early intervention

- ❑ Strong evidence of reduced disability due to schizophrenia in those with early intervention (McGorry et al, 2009)
- ❑ Nationally through “headspace”; in NSW through the recently established Youth Mental Health programs



# Prevention and early intervention

- At present, apart from knowing that those with a family history of bipolar disorder are at increased risk, we have no means of identifying those at particular risk, or of identifying the condition early



# Prevention and early intervention

- Therefore, there is currently no evidence for targeting a particular “high risk” bipolar disorder population for prevention or early intervention



# Mental illness in school-aged offspring of parents with bipolar disorder

- ❑ Birmaher et al, 2009
- ❑ 388 offspring of bipolar disorder patients were compared with 251 “control” offspring
- ❑ Increased risk of bipolar disorder (I + II + NOS) in offspring of parents with bipolar disorder (OR = 13.4) compared with controls
- ❑ Mostly BPI and BP - NOS



# Mental illness in school-aged offspring of parents with bipolar disorder

- ❑ Lapalme et al, 1997
- ❑ Meta-analysis of studies of rates in offspring of parents with bipolar disorder
- ❑ Rates of bipolar disorder of 4-15% compared with rates of 0-2% in offspring of controls
- ❑ 2.7 times more likely to develop any mental illness
- ❑ 4.0 times more likely to develop an affective disorder



# “High risk” longitudinal studies in bipolar disorder

- ❑ There have been few studies of populations at “high risk” for bipolar disorder; none have incorporated biological assessments such as brain imaging or genetics
- ❑ Most longitudinal studies have involved relatives of a broad sample of affective disorder patients, including few with bipolar disorder



# “High risk” longitudinal studies in bipolar disorder

- ❑ Carlson & Weintraub, 1993 (Stony Brook High Risk Project)
- ❑ 134 children of bipolar disorder patients
- ❑ Compared to controls: more childhood behavioural and attentional problems; more psychopathology in young adulthood



# “High risk” longitudinal studies in bipolar disorder

- ❑ Carlson & Weintraub, 1993 (Stony Brook High Risk Project)
- ❑ Compared to off-spring of those with other psychiatric disorders: no differences in rates of behavioural problems or psychiatric illness – suggesting a non-specific effect

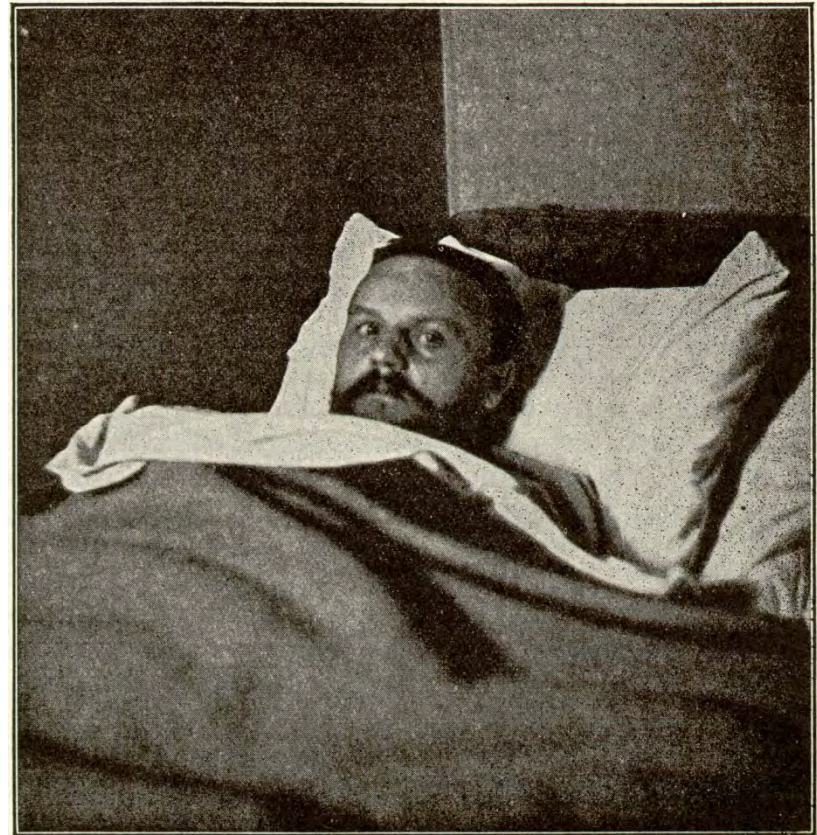


FIG. 18.—Depressive Stupor.

# “High risk” longitudinal studies in bipolar disorder

- ❑ Chang et al, 2000
- ❑ Stanford
- ❑ 60 offspring of bipolar disorder patients
- ❑ 50% had a psychiatric disorder
- ❑ Most commonly ADHD, major depression and bipolar disorder
- ❑ No control sample



# “High risk” longitudinal studies in bipolar disorder

- ❑ Meyer et al, 2004; 2006
- ❑ 23-year follow-up of 48 children of women with bipolar disorder
- ❑ Impairment during adolescence on the Wisconsin Card Sort Test (a measure of executive function) predicted later development of bipolar disorder



# “High risk” longitudinal studies in bipolar disorder

- ❑ Egeland et al, 2003
- ❑ 7-year annual follow-up of children of Amish with bipolar disorder
- ❑ More likely than offspring of controls to show: mood lability, low energy, anxiety, worry, hyper-alertness, attentional difficulties, school role impairment, etc
- ❑ No follow-up to “conversion” to bipolar disorder



FIG. 17.—Depressive Stupor.

*Bipolar Disorder Kids & Sibs Study:*  
Identifying Risk and Resilience to Bipolar Disorder  
in Young People



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# CATCH THEM BEFORE THEY FALL.



Five hundred Australians are required for a world-first study to pinpoint the causes of bipolar disorder.

The focus is on 12 to 30 year-olds who have at least one relative with bipolar disorder but are not sufferers of the illness themselves.

One in 50 Australians suffers bipolar disorder yet there is still no way of identifying a person in the very early stages, or, who is at high risk.

Researchers from the Black Dog Institute and the University of NSW (UNSW) are undertaking the study in collaboration with major universities in the USA. They will look at all the factors that may contribute to the illness, including a patient's DNA, brain imaging and psychological testing.

**Early prevention for better results.**



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To participate: Please phone **1800-352-292**  
or email: [bipolar-kidsandsibs@unsw.edu.au](mailto:bipolar-kidsandsibs@unsw.edu.au)

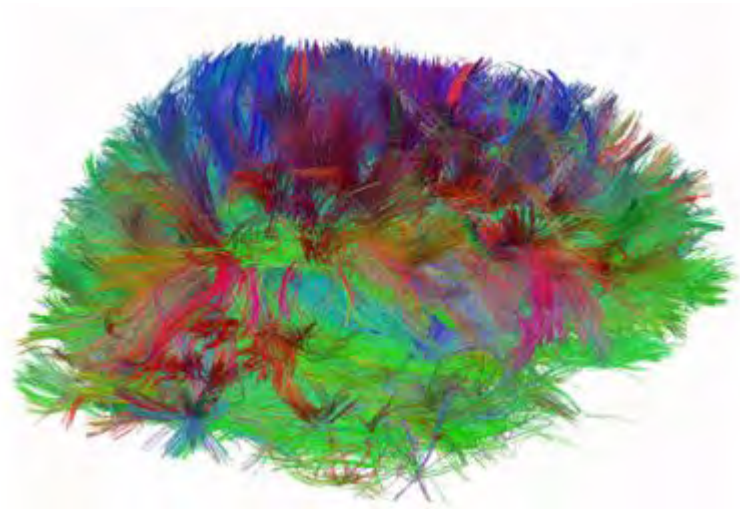
# Aims of the *Bipolar Disorder Kids & Sibs Study*

- ❑ A) Identify factors that are associated with later “conversion” to bipolar disorder in a genetically high-risk population, such as:
  - ❑ i) Gene-environment interactions (e.g. with stress or substances)
  - ❑ ii) Gene-gene interactions



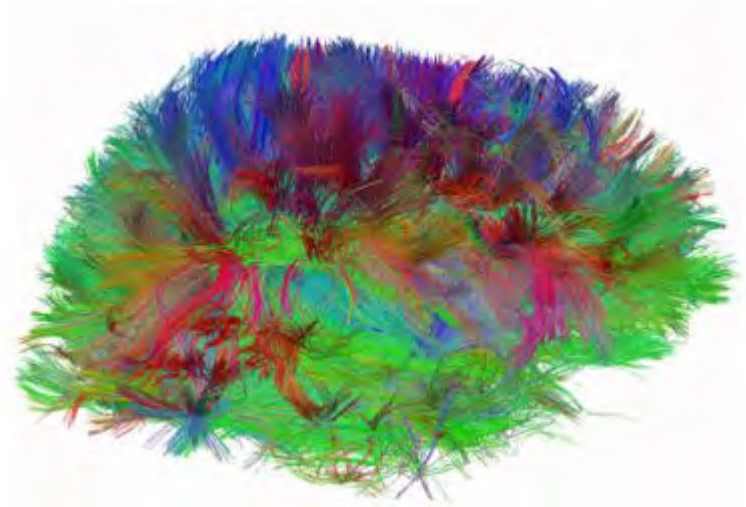
# Aims of the *Bipolar Disorder Kids & Sibs Study*

- ❑ iii) Prior (prodromal) psychological or behavioural symptoms, such as specific depressive symptoms, anxiety, ADHD
- ❑ iv) Baseline brain imaging (structural and functional MRI – focusing on emotional regulation; DTI) or changes in brain structure over time



# Aims of the *Bipolar Disorder Kids & Sibs Study*

- v) Neuropsychological testing – focusing on executive function and emotional regulation



# Aims of the *Bipolar Disorder Kids & Sibs Study*

- B. By comparison with normal controls, identify clinical and biological (such as brain imaging or neuropsychological) differences between “well” offspring and controls, i.e. identify potential endophenotypes of bipolar disorder



# Who is eligible for the *Bipolar Disorder Kids & Sibs Study?*

- ❑ Anyone between the ages of 12 and 30 years (the age range during which bipolar disorder most frequently first presents):
  - ❑ With a parent or sibling who has been diagnosed with bipolar disorder
  - ❑ Who has not yet developed bipolar disorder



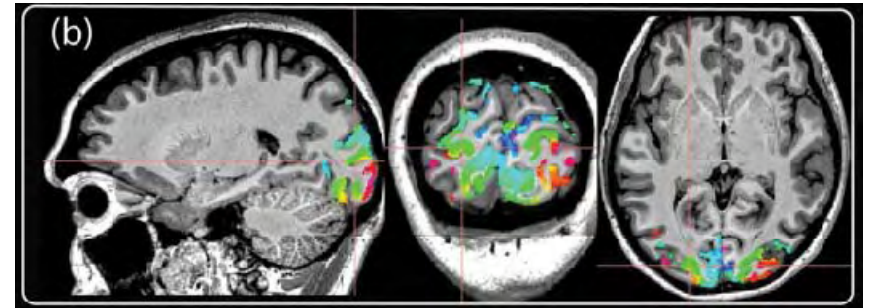
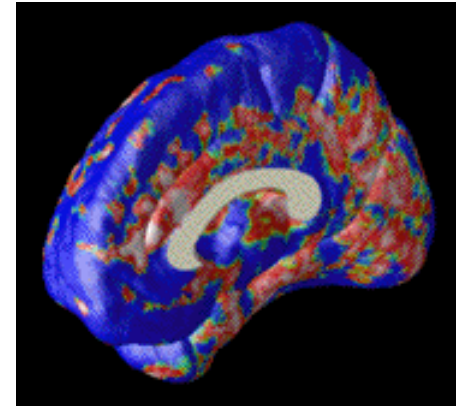
# Who is eligible for the *Bipolar Disorder Kids & Sibs Study?*

- ❑ Those who have depression, anxiety or other conditions are eligible
- ❑ Those 12-30 years with no family or personal history of bipolar disorder (the control sample)



# What does the study involve?

- ❑ Initial 1-2 days:
  - ❑ Detailed interviews with young person and parent(s)
  - ❑ Brain scans
  - ❑ Blood test for genetics
  - ❑ Neuropsychological tests
- ❑ Annual follow-up (briefer):
  - ❑ Review of symptoms
  - ❑ Review of life stressors



To participate: Please phone **1800-352-292**  
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