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# Workshop C8, Part 1: Prevention of depression among children and adolescents

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# Background

- Depression is common in young people
- Pooled estimates of prevalence (Costello 2006):
  - 2.8% under age of 13
  - 5.6% between age 13 and 18
  - 20-25% had depressive period by age 19
- Associated with poor academic performance, social dysfunction, substance abuse, suicide
- What preventive interventions are effective ?



# Cochrane Depression, Anxiety and Neurosis Group

## Welcome to CCDAN

The Cochrane Collaboration Depression, Anxiety and Neurosis Review Group (CCDAN) is responsible for preparing [Cochrane reviews](#) that cover a broad range of mental health issues. The principle conditions that we cover are:

- Mood disorders;
- Anxiety disorders;
- Somatoform disorders; and
- Eating disorders.

CCDAN's scope also includes clinically significant problems such as deliberate self-harm, and suicide attempt. For full details see [Scope](#) section.

The group was established in 1996 and is currently co-ordinated by an editorial base located within the [Centre for Academic Mental Health](#) at the University of Bristol, UK. [Meet the team.](#)

You should be able to find all the information you need about our group on this website, but if not please do not hesitate to [contact us](#).

For information on our latest publications please see [What's New](#).

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# Psychological and educational interventions for preventing depression in children and adolescents (Review)

Merry SN, Hetrick SE, Cox GR, Brudevold-Iversen T, Bir JJ, McDowell H



**THE COCHRANE  
COLLABORATION®**

Merry, Cochrane  
Database Syst Rev  
2011

# Review question in brief

Are psychological or educational interventions effective in preventing the onset of depressive disorder in children and adolescents?



Waldhäusel, Stuttgarter Zeitung

# Review question (PICOS)

- P** = children and adolescents (5 – 19 y.o.)
- I** = psychological or educational interventions  
(universal / targeted at groups at risk)  
**NOT** prevention of relapse or drug therapy
- C** = placebo, any active / no intervention
- O** = prevalence of depressive disorder  
(validated measures) & of depressive  
symptoms
- S** = RCTs (including cluster RCTs)

# Methods

- Comprehensive literature searches (last July 2010)
  - Reference lists, conference abstracts
  - Contact with authors
- Quality assessment using Cochrane 'Risk of Bias' tool
- Assessment of heterogeneity
- Meta-analysis (random effects model)

# Included studies

68 studies included, published 1990 – 2010

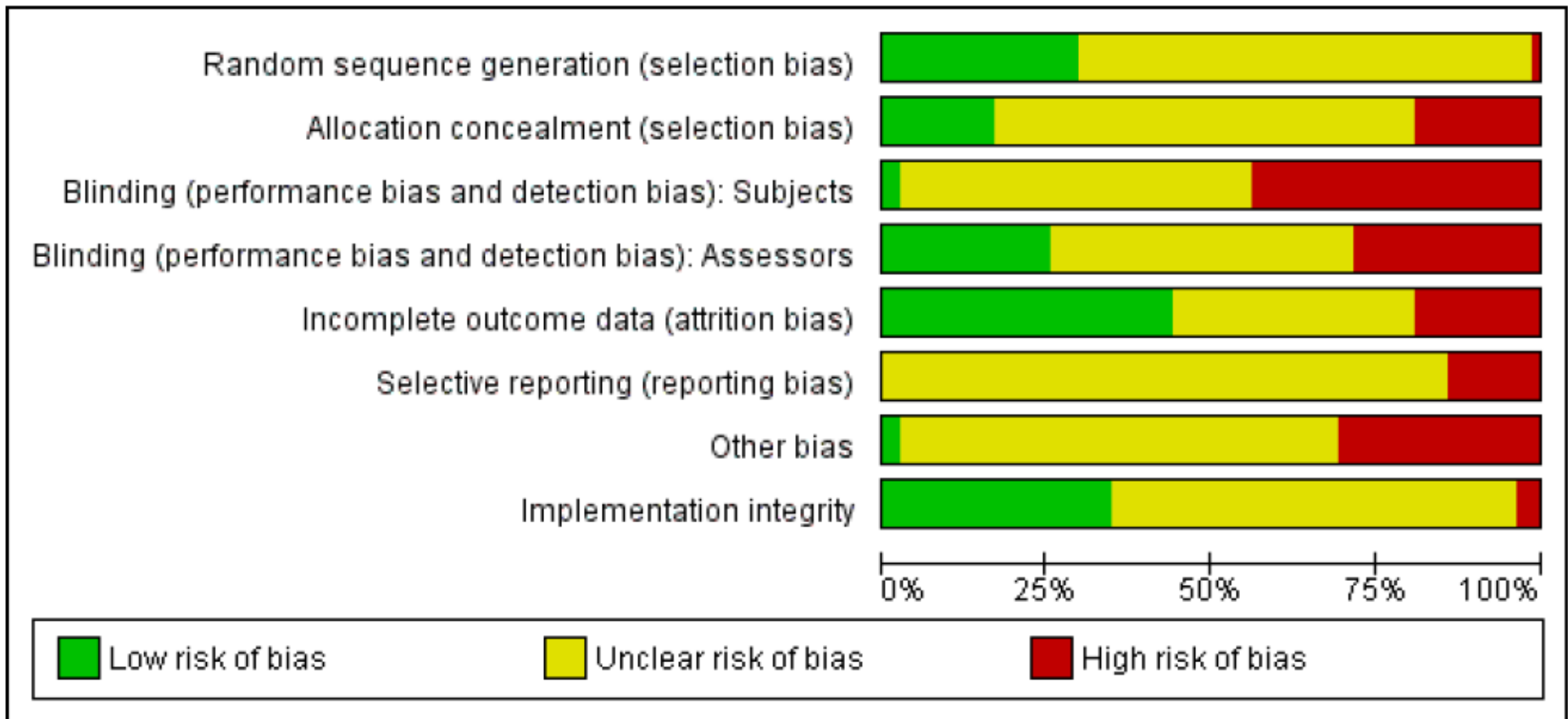
- Size: 21 to 6634 participants
- 20 cluster RCTs (cluster = school or class)
- 58 psychological; 3 educational ; 7 combined interventions
  - programmes based on Cognitive Behavioral Therapy
  - some with focus on self-efficacy or stress reduction
- 31 universal prevention programmes
- 39 targeted at populations at risk (various definitions)
- Wide range of countries (35 N America; 1 Swiss)



|               |   |
|---------------|---|
| Methods       | <p>RCT</p> <p>Power calculation: Yes.</p> <p>Source of subjects described: Yes.</p> <p>Representative sample recruitment: Yes.</p> <p>Use of diagnostic criteria (or clear specification of inclusion criteria): Yes</p>  |
| Participants  | <p>Description: Targeted sample.</p> <p>Mean age (SD): Intervention=11.8 years (2.6) Control=11.3 years (2.8)</p> <p>Age range: 7 to 16 years</p> <p>Sex: Male= 58 ; Female= 41</p> <p>Source: University Children's Hospital, Zurich.</p> <p>Location: Switzerland</p> <p>Inclusion criteria: Medical treatment after an RTA, fluent in German.</p> <p>Exclusion criteria: Severe head injury or previous evidence of intellectual impairment</p>  |
| Interventions | <p>Intervention: Psychological.</p> <p>Type: Brief trauma therapy and PTSD psycho-education: Detailed reconstruction of the accident and creation of a trauma narrative, identification of accident-related appraisals, psycho-education, leaflet on post-traumatic stress.</p> <p>Duration: Single session.</p> <p>No of sessions: One session of 30 minutes.</p> <p>Group Size: Individual</p> <p>Manualised: Unclear.</p> <p>Training: Not stated.</p> <p>Delivered by: A psychologist.</p> <p>Comparison: No intervention.</p> <p>Type: Standard medical care including clinical diagnostics and comprehensive medical treatment.</p> <p>Assessment points: Pre-test, two months, six months.</p> |
| Outcomes      | <p>Outcome measures described clearly or use of validated instruments:</p> <p>Depression: The Children's Depression Inventory (CDI).</p>  |

# Study quality (risk of bias)

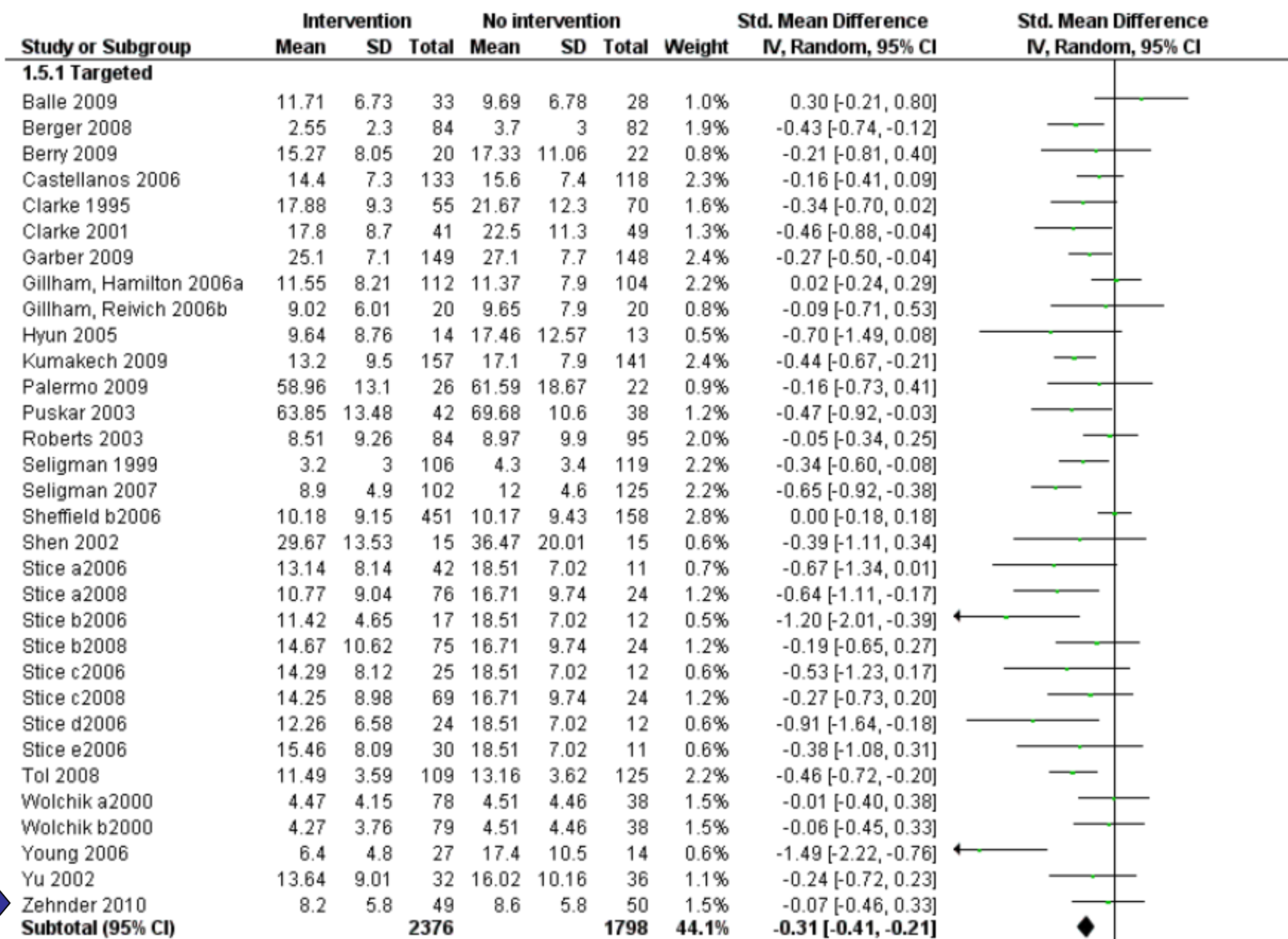
Figure 1. Risk of bias graph: Review authors' judgements about each risk of bias item presented as percentages across all included studies.



# Effects of interventions

## Comparison: any interventions vs. no interventions

- 50 studies, 63 intervention arms, 13.799 participants
- Reduction in depression scores, post intervention
  - **SMD -0.20 (95%CI: -0.26 to -0.14)**
- Targeted interventions (32 intervention arms):
  - **SMD -0.31 (95%CI: -0.41 to -0.21)**
- Universal interventions (31 intervention arms)
  - **SMD -0.10 (95%CI: -0.16 to -0.04)**



Heterogeneity: Tau<sup>2</sup> = 0.04; Chi<sup>2</sup> = 64.93, df = 31 (P = 0.0003); I<sup>2</sup> = 52%

Test for overall effect: Z = 6.02 (P < 0.00001)



### 1.5.2 Universal

|                          |       |       |             |       |       |             |              |                             |
|--------------------------|-------|-------|-------------|-------|-------|-------------|--------------|-----------------------------|
| Barnet 2007              | 14.4  | 13    | 36          | 15.3  | 13.6  | 26          | 1.0%         | -0.07 [-0.57, 0.44]         |
| Bond 2004                | 6.46  | 8.15  | 664         | 6.6   | 8.41  | 686         | 3.4%         | -0.02 [-0.12, 0.09]         |
| Calear 2009              | 10.95 | 10.17 | 267         | 12.51 | 10.83 | 452         | 3.0%         | -0.15 [-0.30, 0.00]         |
| Cardemil 2002a           | 6.58  | 6.25  | 24          | 11.17 | 7.47  | 22          | 0.8%         | -0.66 [-1.25, -0.06]        |
| Cardemil 2002b           | 6.24  | 5.31  | 47          | 7.31  | 5.99  | 55          | 1.5%         | -0.19 [-0.58, 0.20]         |
| Chaplin a2006            | 5.77  | 7.3   | 37          | 8.49  | 7.6   | 19          | 0.9%         | -0.36 [-0.92, 0.20]         |
| Chaplin b2006            | 5.87  | 6.5   | 79          | 7.57  | 7.06  | 53          | 1.7%         | -0.25 [-0.60, 0.10]         |
| Gillham a1995            | 6.58  | 5.6   | 28          | 9.74  | 9.1   | 19          | 0.8%         | -0.43 [-1.02, 0.16]         |
| Gillham a2007            | 7.2   | 7.58  | 170         | 7.52  | 6.09  | 87          | 2.2%         | -0.04 [-0.30, 0.21]         |
| Gillham b1995            | 9.04  | 7.7   | 28          | 9.74  | 9.1   | 19          | 0.8%         | -0.08 [-0.67, 0.50]         |
| Gillham b2007            | 7.18  | 7.47  | 169         | 7.52  | 6.09  | 87          | 2.2%         | -0.05 [-0.31, 0.21]         |
| Hains 1990               | 6.67  | 3.16  | 9           | 7.67  | 7.35  | 12          | 0.4%         | -0.16 [-1.03, 0.70]         |
| Hains 1992               | 59.56 | 9.91  | 9           | 69.5  | 11.5  | 8           | 0.3%         | -0.88 [-1.89, 0.13]         |
| Horowitz a2007           | 8.19  | 6.86  | 49          | 11.78 | 9.69  | 37          | 1.3%         | -0.43 [-0.87, -0.00]        |
| Horowitz b2007           | 9.47  | 7.3   | 45          | 11.78 | 9.69  | 39          | 1.3%         | -0.27 [-0.70, 0.16]         |
| Kraag 2009               | 2.29  | 2.24  | 583         | 2.29  | 2.23  | 519         | 3.3%         | 0.00 [-0.12, 0.12]          |
| Lock 2003                | 7.34  | 6.36  | 132         | 8.35  | 7.13  | 88          | 2.2%         | -0.15 [-0.42, 0.12]         |
| Lowry-Webster 2001       | 9.97  | 9.39  | 146         | 11.64 | 9.61  | 52          | 1.9%         | -0.18 [-0.49, 0.14]         |
| Mason 2007               | 0.232 | 0.343 | 131         | 0.199 | 0.251 | 137         | 2.4%         | 0.11 [-0.13, 0.35]          |
| Pössel 2004              | 13.08 | 7.72  | 118         | 14.37 | 8.03  | 86          | 2.1%         | -0.16 [-0.44, 0.11]         |
| Pössel 2008              | 0.66  | 0.59  | 131         | 0.66  | 0.56  | 111         | 2.3%         | 0.00 [-0.25, 0.25]          |
| Quayle 2001              | 6.97  | 9.02  | 21          | 4.04  | 5.11  | 21          | 0.8%         | 0.39 [-0.22, 1.00]          |
| Rivet 2005               | 47.45 | 7.95  | 58          | 50.49 | 10.94 | 58          | 1.6%         | -0.32 [-0.68, 0.05]         |
| Roberts 2010             | 7.24  | 6.66  | 237         | 6.29  | 6.84  | 190         | 2.7%         | 0.14 [-0.05, 0.33]          |
| Rooney 2006              | 10.28 | 7.8   | 46          | 15.43 | 10.51 | 30          | 1.2%         | -0.57 [-1.04, -0.10]        |
| Sawyer 2010              | 15.32 | 12.24 | 861         | 14.66 | 12.21 | 747         | 3.4%         | 0.05 [-0.04, 0.15]          |
| Shatte a1997             | 9.53  | 10.85 | 51          | 9.83  | 8.04  | 21          | 1.0%         | -0.03 [-0.54, 0.48]         |
| Shatte b1997             | 8.19  | 9.4   | 47          | 9.83  | 8.04  | 21          | 1.0%         | -0.18 [-0.70, 0.34]         |
| Sheffield a2006          | 8.81  | 8.15  | 467         | 10.17 | 9.43  | 157         | 2.8%         | -0.16 [-0.34, 0.02]         |
| Sheffield c2006          | 8.82  | 8.57  | 460         | 10.17 | 9.43  | 157         | 2.8%         | -0.15 [-0.33, 0.03]         |
| Spence 2003              | 6.24  | 7.85  | 227         | 8.65  | 10.04 | 232         | 2.8%         | -0.27 [-0.45, -0.08]        |
| <b>Subtotal (95% CI)</b> |       |       | <b>5377</b> |       |       | <b>4248</b> | <b>55.9%</b> | <b>-0.10 [-0.16, -0.04]</b> |

Heterogeneity:  $\tau^2 = 0.01$ ;  $\chi^2 = 46.13$ ,  $df = 30$  ( $P = 0.03$ );  $I^2 = 35\%$

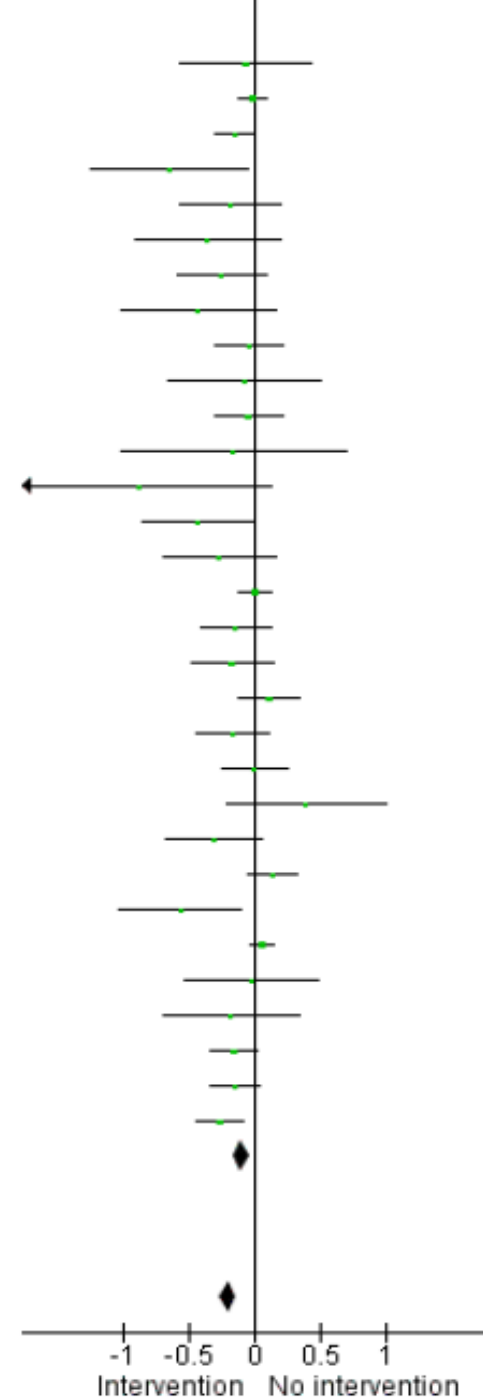
Test for overall effect:  $Z = 3.30$  ( $P = 0.0010$ )

**Total (95% CI)** **7753** **6046** **100.0%** **-0.20 [-0.26, -0.14]**

Heterogeneity:  $\tau^2 = 0.03$ ;  $\chi^2 = 140.26$ ,  $df = 62$  ( $P < 0.00001$ );  $I^2 = 56\%$

Test for overall effect:  $Z = 6.54$  ( $P < 0.00001$ )

Test for subgroup differences:  $\chi^2 = 12.21$ ,  $df = 1$  ( $P = 0.0005$ ),  $I^2 = 91.8\%$



-1 -0.5 0 0.5 1  
Intervention No intervention

# Are effects sustainable ?

**Comparison: any interventions vs. no interventions**

**Outcome: depression scores**

- 3 – 9 months follow-up (43 intervention arms)
  - **SMD -0.16 (95%CI: -0.23 to -0.10)**
- 12 months follow-up (24 intervention arms):
  - **SMD -0.10 (95%CI: -0.18 to -0.02)**

# Conclusions

- Both targeted and universal depression prevention programmes are likely to be effective in reducing incidence of depressive disorder
  - Overall risk difference → NNT = 11 (95%CI 7 – 20)
- Effects last up to 12 months after intervention (especially targeted interventions)
- Few studies on educational programmes and few using placebo / attention control
  - Is evidence from comparisons with ‘no intervention’ valid enough to inform policy making ?
  - Known placebo effects in depression studies

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The **Cochrane Public Health Group** (CPHG) aims to work with contributors to produce and publish Cochrane reviews of the effects of population-level public health interventions. The core CPHG editorial team is part of Public Health Insight, based at the University of Melbourne.

### Latest News

#### Increase in Cochrane's Impact Factor

The 2013 Journal Citation Report (JCR) has been released by Thomson ISI and the impact factor for the Cochrane Database of Systematic Reviews (CDSR) is **5.939**. This is an increase on the 2012 impact factor, which was 5.785. The CPHG review, *Interventions for preventing obesity* contributed significantly to this achievement, with it being the highest cited review for the 2012-2013 measurement period. The author team are currently conducting an overview of reviews of interventions for childhood obesity, to help inform the update to this review.

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