

Proposal for a new Campbell-Cochrane Review to be registered within the Co-registered Developmental, Psychosocial and Learning Problems Group

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Useful notes for completing this form appear at the end of this document.

Authors completing this form are also advised to note that whilst preparing their review they are required to read and follow:

'The Cochrane Handbook for Systematic Reviews of Interventions'

<http://www.cochrane.org/resources/handbook/index.htm>

Proposed Title (Using Standard Format)

Preschool feeding programmes for improving the health of disadvantaged infants and young children

Contact Author Name

Elizabeth Kristjansson

Motivation for review

In developing countries, nearly 150 million children under five years of age are underweight and approximately 170 million are stunted¹. Even in developed countries, poor children are at risk of stunted growth and micronutrient deficiencies. Although the proportion of underweight among under-five children is declining, the annual average rate of reduction in developing countries is only 1.7, which is not fast enough to reach the Millennium Development Goal of halving the rate of underweight between 1990 and 2015². Throughout the life cycle, undernutrition (or Protein Energy Malnutrition) may contribute to mortality, to increased risks of infection and chronic disease in adulthood, and to reduced cognitive performance. Recent estimates attribute approximately 50% of all under-five deaths in the developing world to undernutrition. Undernutrition also increases the risk of morbidity from diarrhoea, pneumonia, and malaria, this in turn, may exacerbate poor nutritional status. There is a strong link between severe undernutrition in early childhood and decreased intelligence, academic achievement and motor functioning. Even mild to moderate undernutrition puts children at higher risk for intellectual deficits and poorer school performance.

Experts agree that it is important to provide nutritional intervention early (before the age of three) in order to maximize developmental potential³. Preschool feeding programs for children 0 to 5 years old are widespread (Squessaro, Onis, Carroli, 2006). The aim of such programs may include: offering nutritional support, improving

1 UNICEF (2007) State of the World's Children.

2 UNICEF (2006) Progress for Children: A report card on nutrition

3 Bundy, D.A.P, et al, School based health and nutrition programs. In Bundy, D.A.P, Sheaffer, S., Jukes, M., et al. *Disease Control priorities in Developing countries.*

survival, preventing growth failure, lowering morbidity, and improving cognitive development.

Evidence on the effectiveness of such feeding programmes is timely and important in an era when malnutrition is the ‘single biggest cause of the global burden of disease’⁴. The inclusion of ‘eradicating extreme poverty and hunger’ and ‘reducing child mortality’ as two of the UN Millennium Development Goals further highlights the need for evidence on interventions to improve the nutrition, cognition, and school readiness of young children. It is vital to learn what works, what doesn’t work, and why in order to best serve those who are most in need. This is an important policy priority. For example, The World Food Programme is planning to provide feeding to 600,000 preschoolers in 14 countries; it needs better evidence on which to base decisions. However, up to now, there has been limited effort to systematically review the effectiveness of preschool feeding for a wide range of outcomes and for all ages in the preschool years. One recent Cochrane review⁵ reported on the effectiveness of four RCTs of community feeding programs for growth in preschool children. The evidence from these was mixed, and the authors were unable to draw firm conclusions.

Important questions still remain:

1. Do feeding programs improve the physical, psychological, and social health of disadvantaged children under six years of age?
2. Are these programs as effective for children who are disadvantaged as they are for more advantaged children?
3. Are these programs more effective for younger children than for older children?
4. What are the mechanisms through which they work (or fail to work)?
5. Does the nutrient (macro and micro) composition of food offered through feeding programs for preschool children affect outcomes?
6. Do programmes affect the quality and quantity of food given at home, including breast-milk, and does this in turn affect outcomes of feeding programmes?

This review is designed to answer those questions.

Has the review already been carried out or published?

No.

If yes, where has it been published?

4 Murray C, Lopez A. (1998) Gender and Nutrition in the Global Burden of Disease, 1990 to 2020. In: Challenges for the 21st Century: A Gender Perspective on Nutrition Through the Life Cycle - Nutrition Policy Paper No. 17. ACC/SCN Symposium Report

5 Squassero, de Onis, and Carroli, 2005

Description of proposal

For all points at which you are advised to see a section of the Cochrane Handbook for Systematic Reviews of Interventions, please consult:

<http://www.cochrane.org/cochrane/handbook/hbook.htm>

a) Objectives of review (briefly stated)

- 1) We aim to undertake a systematic review on the effectiveness of feeding programs for preschool children in order to learn:
 - a) Whether they are effective for improving the physical, psychological and social health of socio-economically disadvantaged children under six years of age.
 - b) Whether effectiveness differs by level of socio-economic advantage.
 - c) Whether effectiveness differs by age group.
 - d) Whether the nutrient composition of the food offered affects outcomes.
 - e) Whether the quality and quantity of food usually given at home, including breastmilk, is affected by feeding programmes and if this in turn affects programme outcomes.
 - f) About the mechanisms through which they achieve or fail to achieve their impact.
- 2) We will also develop and carry out a comprehensive knowledge translation plan.

b) Types of study

- RCTs
- CCTs,
- CBAs
- ITS

c) Participants

Infants and children aged 6 months to 5 years in all countries across the world.

d) Interventions and specific comparisons to be made

Programmes can comprise meals or snacks (including milk) administered in a community or preschool/daycare setting. Studies must compare children who receive feeding to a non-intervention control.

We will exclude therapeutic feeding for severely malnourished children.

(e) Outcomes

- 1) Physical health outcomes, including:
 - observed physical activity
 - biochemical outcomes (e.g. micronutrient status)

- morbidity and mortality
- anthropometric indicators (e.g. z scores for weight and height , mid-upper arm circumference, skinfold thickness, etc)

2) Cognitive outcomes, including:

- psychomotor development
- Global mental (cognitive) development or intelligence (e.g. performance on the Bayley Scales of Infant Development or on the Weschler Intelligence Scale for Children)
- attention
- memory
- reasoning
- vocabulary
- motivation
- achievement
- language development

3) Social outcomes, including:

- attendance at preschool or daycare (for programs delivered in these settings)
- appropriate social play

4) Adverse outcomes, for example:

- stigmatization, dependency, disruptive behaviour at school, obesity or excessive weight loss, substitution (e.g. reduction in quality or quantity of food given at home, including breastmilk)

5) Other

- We will extract data on costs, if reported.

e) What subgroup analyses do you intend to undertake?

Parental income, occupational status, parental education level, child baseline nutritional status, age, and gender, location of feeding (preschool/daycare or community).

f) Other information relevant to this proposal

A full process evaluation will be undertaken in order to understand factors that impact on effectiveness. Process elements to be extracted include:

1. Dietary information:

- A full description and nutrient composition of the food provided through the feeding programme. Where nutrient composition data do not exist in the publication, and when food description is sufficient, nutrient composition will be estimated using the USDA nutrient datafile. Where nutrient composition information is sufficient, the nutrient adequacy of the food provided will be assessed using the estimated average requirements for populations.
- Assessment of overall dietary intake including feeding frequency and breastmilk intake. Where data permit, substitution (will also be assessed (i.e. overall nutrient intake and whether or not children receive less at home due to food being given through the feeding programme),

2. type of feeding and time of day food given,

3. whether intake is monitored,

4. compliance,

5. quality/acceptability of food given,

6. duration of intervention,

7. Setting: country, time period, ethos

8. Program goals.

Review author team and area of expertise

	Name	Area of expertise <i>(please indicate the background and skills of each review author and the expertise they bring to the review team e.g. content, methodology; statistics)</i>
Contact author:	Elizabeth (Betsy) Kristjansson	Measurement and evaluation. Health inequalities and inequities. Contextual influences on health and health inequalities. Food security. Concepts and methods related to equity focused systematic reviews.
Co-author(s) :	Mark Petticrew	Expertise in systematic reviews of public health interventions, health equity; evaluation of the health effects of social interventions and social policies
	George A. Wells	Expertise in the design and analysis of clinical trials, statistical methodology related to disease processes and health care delivery, systematic reviews and meta-analysis, economic evaluations and the development and assessment of decision support technologies for patients and practitioners.
	Julia Krasevec	Nutritionist. Expertise in international development
	Laura Janzen	Psychologist. Expertise in psychological assessment of children
	Vivian Robinson	Expertise in equity focussed systematic reviews.
	Trisha Greenhalgh	Process evaluation, dissemination of research findings.
	Beverly Shea	Systematic reviews, quality assessment
	Peter Tugwell	Systematic reviews of clinical interventions, equity focused systematic reviews, rheumatology, clinical outcome measures, clinimetrics.
	Al Mayhew	Systematic reviews, study design.

Do you or your co-authors have any interests in this topic that could be perceived as conflicts of interest?

Campbell-Cochrane Reviews should be free of any real or perceived bias introduced by the receipt of any benefit in cash or kind, any hospitality, or any subsidy derived from any source that may have or be perceived to have an interest in the outcome of the review. It is a matter of Cochrane Collaboration policy that direct funding from a single source with a vested interest in the results of the review is not acceptable. See

<http://www.cochrane.org/docs/commercialsponsorship.htm>

No

If 'yes', what are they?

Is this review the subject of specific funding and/or does it need to be finished within a specific timeframe? If yes, please give details.

The World Food Programme School feeding team may be able to fund part of this review (\$5,000). However, we are searching for other funding.

Roles and responsibilities

TASK	WHO HAS AGREED TO UNDERTAKE THE TASK?
Draft the protocol	Betsy Kristjansson, Julia Krasevec, Laura Janzen
Develop a search strategy	Jessie McGowan
Select which trials to include (2 people + 1 arbiter in the event of dispute)	Betsy Kristjansson, Mark Petticrew, Julia Krasevec, Al Mayhew
Extract data from trials (2 people)	Betsy Kristjansson, Vivian Robinson, Bev Shea (methodological quality)
Enter data into RevMan (Cochrane software)	Research Assistant
Carry out the analysis	Betsy Kristjansson, Vivian Robinson, with advice from George Wells
Interpret the analysis	Betsy Kristjansson, Vivian Robinson, George Wells, Julia Krasevec, Laura Janzen
Draft the final review	Betsy Kristjansson, Julia Krasevec, Laura Janzen, Vivian Robinson
Keep the review up to date	Betsy Kristjansson

Assess dietary information (e.g. calculation of nutrient content of meal/snack, etc)	Julia Krasevec
Judge baseline equivalence of groups, reliability of anthropometric indices ,	Julia Krasevec, Beverley Shea, Betsy Kristjansson
Judge reliability of psychological measures	Laura Janzen, Betsy Kristjansson
Judge reliability of measures of micronutrient status	Peter Tugwell, Julia Krasevec
Carry out process evaluation	Trisha Greenhalgh, Betsy Kristjansson, Vivian Robinson

Other information

Have you or a co-author written a systematic review before?.....	Yes
If yes, was it a Campbell and/or Cochrane Review?.....	Yes
Have you attended a Campbell or a Cochrane Review training workshop?.....	Yes
If yes, which one?.....	
If no, do you require assistance in planning to?	No
What type of computer do you use?.....	PC
Do you have a copy of the Cochrane Handbook for Systematic Reviews of Interventions (http://www.cochrane.org/resources/handbook/index.htm)	
Do you have a copy of RevMan 4.2, the latest version Cochrane Review Manager software?	Yes
If yes, do you already have a Reviewer ID from another Group and if so, what is it?	
Do you have access to a statistician (strongly recommended)?	Yes
Do you predominantly speak / write in a language other than English?	Yes

Do you have access to electronic databases relevant to your review topic (eg MEDLINE, PubMed, <i>The Cochrane Library</i> , <i>PsycINFO</i>)?	Yes
Do you have access to a medical / University library:	Yes
If yes, can you order journal articles not held in the Library?	Yes
Have you experience of searching databases yourself?	Yes
Do you have access to reference management software (eg Procite, EndNote, Reference Manager):	Yes
If yes, which software, and what version?	
...	

Provisional dates for submission of drafts to editorial base

- A) Draft PROTOCOLEnd June 2008**

- B) Draft REVIEWEnd December 2008**

Agreement to Editorial Review and Publication in The Cochrane Library

By completing this title registration form, you agree to submit a draft protocol within 6 months. If there is no correspondence from you during this period, or no draft protocol has been received, the Cochrane Review Group reserves the right to de-register the title or transfer the title to a new author.

By completing and returning this form, you are accepting responsibility for maintaining and updating the review in accordance with Cochrane Collaboration policy, i.e. you will be responsible for ensuring the review is updated at least every two years. If you are unable to update this review the Review Group reserves the right to transfer the review to a new author.

The support of the editorial team in producing your review is conditional upon your agreement to publish the protocol and finished review, together with subsequent updates, in The Cochrane Library and the Campbell C2-RIPE. By completing and signing this form you undertake to publish firstly in The Cochrane Library (concurrent publication in other journals may be allowed in certain circumstances with prior permission of the editorial team.).

I understand the long-term commitment necessary when undertaking this review.

Form completed by: **Date:**

Details of contact author

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Privacy (*this relates to the manner in which your contact details are held on our database, which is shared with other Cochrane entities*).

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Hide email address	Yes	No	No
Hide mobile ph.	Yes	No	

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