Review question(s)
Does deworming improve anemia status in women between the ages of 15 and 49?

Searches
The MEDLINE, EMBASE, CINAHL and Food and Technology Abstracts databases were searched with no restriction on language and publication period.

Additional details regarding the search strategy can be found in the attached PDF document.

Link to search strategy
http://www.crd.york.ac.uk/PROSPEROFILES/39557_STRATEGY_20160425.pdf

Types of study to be included
Randomized controlled trials and quasi-experimental studies such as controlled before and after studies and interrupted time series.

Condition or domain being studied
Soil-transmitted helminthiasis (STH) affects 24% (2 billion people) of the global population. The burden of disease of STH was estimated at 4.98 million disability adjusted life years DALYS globally in 2010. These infections rarely cause death, and therefore the burden is predominantly due to morbidity. The most common species of helminths that infect people are the roundworm (Ascaris lumbricoides), the whipworm (Trichuris trichiura) and hookworms (Necator americanus and Ancylostoma duodenale). STH has a negative impact on the nutritional status of infected people. These helminths feed on host tissues and blood which results in a loss of iron and protein that can lead to severe iron deficiency, anemia, or other nutritional impairments.

Participants/ population
Adolescent and adult women aged 12-49.

Intervention(s), exposure(s)
Anthelmintics included in the WHO Model List of Essential Medicines: albendazole, mebendazole, pyrantel, piperazine, levamisole, thiabendazole.

Comparator(s)/ control
No treatment or placebo.

Context
No restrictions on setting types and contexts.

Outcome(s)
Primary outcomes
Anaemia, iron deficiency, parasite load, diarrhoea, severe anaemia, reinfection, all-cause morbidity.
Outcomes must be measured at a minimum of four months after intervention.

Secondary outcomes
Physical function/work capacity, adverse events.
Outcomes must be measured at a minimum of four months after intervention.

Data extraction, (selection and coding)
Two reviewers will conduct independent data extraction and risk of bias assessment of all included studies. The data extraction form will model the EPOC data collection form. Information to be extracted will include data on study design, statistical analysis, details about the participants (including the number in each group), setting (e.g. endemcicy, sanitation), intervention (e.g. type of drugs, dose, frequency and process of implementation), comparison, cost-effectiveness, outcomes (including whether outcomes are validated). We extracted process data on the implementation of the intervention such as method of delivering deworming (e.g. provision of deworming integrated with other programs), amount of supervision. Where possible, we extracted data about socio-demographic variables associated with disadvantage, across factors described by the acronym PROGRESS (place of residence, race/ethnicity, occupation, gender/sex, religion, education, socioeconomic status and social capital). We will extract data on any effect modifier analyses (e.g. subgroup analyses and meta-regression) conducted in the primary studies. We will compare the extraction by both reviewers, and reach consensus by discussion and consultation with a third reviewer, when necessary.

Risk of bias (quality) assessment
The Cochrane Risk of Bias tool will be used to assess bias in the included studies.

Strategy for data synthesis
Aggregate data will be extracted from studies meeting all inclusion criteria. The effect size of the continuous outcomes will be analyzed as weighted mean differences of change scores. Standard deviations for each effect estimate will also be calculated. Dichotomous outcomes will be analyzed as risk ratios.

We will use a random-effects model since we expect the underlying treatment effect will vary depending on the context, populations and setting. We will report analyses for each outcome and follow-up period separately.

We will not conduct network meta-analyses for any of the outcomes.

Analysis of subgroups or subsets
None planned.

Contact details for further information
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Details of any existing review of the same topic by the same authors
The lead author listed for the registration of this review, Vivian Welch, is also the lead author of a systematic review and meta-analysis, titled "Deworming and adjuvant interventions for improving the developmental health and well-being of children in low- and middle-income countries" that has been registered with the Campbell Collaboration and submitted for publishing. Two co-authors of this review registration, Elizabeth Ghogomu and Shalini Suresh, are also co-authors on the review submitted to the Campbell Collaboration.

Anticipated or actual start date
01 January 2016

Anticipated completion date
01 December 2016

Funding sources/sponsors
World Health Organization

Conflicts of interest
None known

Other registration details
The protocol was registered with the World Health Organization.

Language
English

Country
Canada

Subject index terms status
Subject indexing assigned by CRD

Subject index terms
Adolescent; Adult; Anemia; Female; Helminthiasis; Humans; Nutritional Status; Risk Factors; Treatment Outcome

Stage of review
Ongoing

Date of registration in PROSPERO
23 June 2016

Date of publication of this revision
23 June 2016

Stage of review at time of this submission

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PROSPERO

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