Mass deworming programmes have little or no effect on most welfare outcomes

The effectiveness and cost-effectiveness of mass deworming of children to improve child health and other outcomes is debated. This independent analysis reinforces the case against mass deworming, finding little or no effect on most welfare outcomes.

What is this review about?
Soil-transmitted helminthiasis and schistosomiasis affect more than a third of the world’s population. There is debate about the effectiveness and cost-effectiveness of mass deworming of children to improve child health and other outcomes in endemic areas.

This review evaluates the effects of mass deworming for soil-transmitted helminths on growth, educational achievement, cognition, school attendance, quality of life and adverse effects in children in endemic helminth areas.

What studies are included?
Included studies examine mass deworming for soil-transmitted helminths (alone or in combination with other drugs or child health interventions) for children aged 6 months to 16 years, and report at least one of the following outcomes: growth, school attendance, school performance, cognitive processing or development, well-being, or adverse events. Included study designs are randomized trials, interrupted time series and non-experimental studies that used statistical methods of analysis to match participants with non-participants, or statistical methods to account for confounding and sample selection bias.

Sixty-five studies are analyzed in the review, with a treatment duration from 4 months to 5 years, covering 1,092,120 children, including five long-term studies 8-10 years after mass deworming programs with over 90,000 children. These studies were conducted in 24 low and middle income countries. Most programmes studied conduct deworming twice per year or more.
frequently, with only two studies of programmes deworming just once per year.

**Does deworming improve child health and other welfare outcomes?**

Mass deworming for soil-transmitted helminths probably has little to no effect on weight, height, school attendance, cognition measured by short-term attention, or mortality. There are no data on short-term quality of life and little evidence of adverse effects.

Mass deworming for schistosomiasis alone may slightly increase weight but probably has little to no effect on height and cognition. The evidence does not support indirect benefits for untreated children from being exposed to treated children.

Two moderate quality long term studies show an increase in economic productivity (hours worked) and increase in educational enrollment 10 years after deworming. But it is uncertain whether these effects are due to deworming or the combined sanitation and hygiene intervention.

Findings are consistent for various groups of the population by age, sex, worm prevalence, baseline nutritional status, compliance, impact on worms, infection intensity, types of worms, risk of bias, and study characteristics. Deworming for children who screened positive for schistosomiasis or soil-transmitted helminths results in larger gains in weight but no difference in effect on height, cognition or school attendance.

**What are the implications of this review for policy makers and decision makers?**

This independent analysis reinforces the case against mass deworming. In addition to a reconsideration of mass deworming programs in their current form, additional policy options need to be explored to improve child health and nutrition in worm-endemic areas. For schistosomiasis, policy implications are that mass deworming may be effective at improving weight.

**What are the research implications of this review?**

Future research should assess which subset of children benefit from mass deworming using individual level meta-analysis. This analysis could explore whether it is feasible to develop a case-finding tool to identify children and settings which will benefit from treatment.