Evidence Update

Diarrhoea Series

In areas where diarrhoeal disease is common, do interventions that aim to improve the quality of drinking water prevent diarrhoea?

Researchers have tested a range of interventions applied at the water source, and at the point of use. Those tested all helped reduce diarrhoea in all age groups.

Inclusion criteria

Studies:

Randomized and quasi-randomized controlled trials.

Participants:

Children and adults living in areas where diarrhoeal disease is common.

Intervention:

Intervention: interventions to improve the microbiological quality of drinking water.

Control: usual practice in respect of drinking water, or another type of intervention.

Primary outcome:

Episodes of diarrhoea.

Results

- 19 randomized controlled trials and 11 quasi-randomized controlled trials, with over 53,000 participants. Interventions were at source (for example, wells) or at point of use (including improved storage or treatment by chlorination, solar treatment, filtration, or flocculation/ disinfection).
- For all age groups, including children under five, the intervention groups generally had fewer episodes of diarrhoea.
- Effect sizes were greater with household interventions than with interventions targeted at the water source.
- Interventions appeared to work irrespective of whether the study area had improved water supply or sanitation.

Adapted from Clasen T, Roberts I, Rabie T, Schmidt W, Cairncross S. Interventions to improve water quality for preventing diarrhoea. *Cochrane Database of Systematic Reviews* 2006, Issue 3. Art. No.: CD004794. DOI: 10.1002/14651858.CD004794.pub2. *Evidence Update* published in January 2007.

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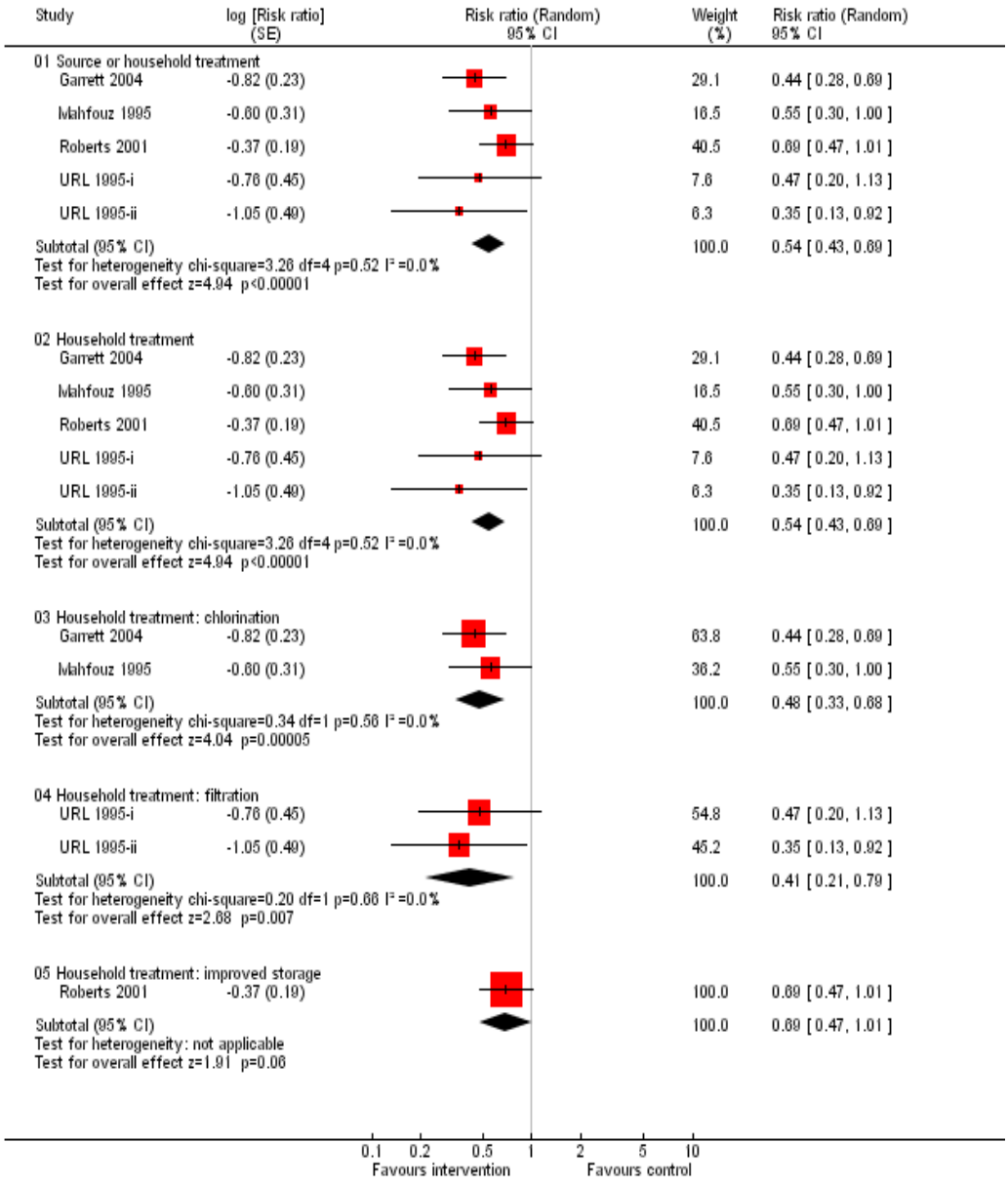
Interventions to improve water quality versus control, results pooled using risk ratios: episodes of diarrhoea in children under the age of five years



Authors' conclusions

Implications for practice:

Interventions to improve the microbiological quality of the drinking water, particularly at household level, are effective at preventing diarrhoea in areas where diarrhoea is common.

Implications for research:

Rigorously conducted randomized controlled trials are needed to compare various approaches to improving drinking water quality. There is a need to assess new technologies for improving water quality in remote and low-income settings where the burden of diarrhoea is highest. Approaches to optimize the take-up and long-term use of these interventions should also be investigated.