

# Evidence Update

Summary of a Cochrane Review

Malaria Series

In areas where malaria transmission is seasonal, does intermittent preventive treatment reduce malaria morbidity and mortality in children?

Yes, intermittent preventive treatment of children reduces episodes of malaria, and probably prevents some deaths.

Researchers in The Cochrane Collaboration conducted a review of the effects of Intermittent Preventive Treatment (IPTc) to prevent malaria in pre-school children living in areas where malaria is seasonal. After searching for relevant studies, they identified seven relevant trials (12,589 participants). This Evidence Update summarizes the key findings.

## What is IPTc and how does it work?

In areas where malaria is common, young children often have several episodes of malaria each year, which can sometimes be severe and life threatening.

In areas where malaria is seasonal, a practical policy option is to give treatment doses of drugs to prevent malaria at regular intervals during the transmission season regardless of whether the child has malaria symptoms or not. This is known as Intermittent Preventive Treatment (IPTc).

## What does the research say?

### The effects of IPTc on malaria episodes:

- IPTc prevents three-quarters of all malaria episodes.
- IPTc prevents three-quarters of severe malaria episodes.
- IPTc probably prevents some deaths.

Several antimalarial drugs or combinations have been tried, and shown to be effective. The most studied is amodiaquine plus sulphadoxine-pyrimethamine (AQ+SP). This combination probably doesn't have serious side effects but does cause vomiting in some children.

This benefit occurs even in areas where insecticide-treated net usage is high.

### Is the research reliable?

Yes. The trials were generally well conducted with a low risk of bias.

### Can the results of the research be applied to my setting?

All seven trials were conducted in West Africa, (Burkina Faso, Gambia, Senegal, two in The Gambia and two in Mali), where malaria transmission is highly seasonal.

Most studies included children aged between three and 59 months.

The results can reasonably be applied to other areas with similar conditions.

## The effects of IPTc on malaria episodes

This table provides more detail about what happens when pre-school children are given IPTc in areas where malaria is seasonal. These numbers are based on the results of the research, when available. The quality of evidence is either ranked as high, moderate, low or very low. The higher the quality, the more certain we are about what will happen.

Outcome	Without IPTc	With IPTc	What happens	Quality of evidence
How many pre-school children get episodes of clinical malaria?	2.5 episodes per child per year	0.7 episodes per child per year	IPTc prevents three-quarters of clinical malaria episodes	High
How many pre-school children get episodes of severe malaria?	35 episodes per 1000 children per year	9 episodes per 1000 children per year	IPTc prevents three-quarters of severe malaria episodes	High
How many pre-school children die from any cause?	3 per 1000 per year	2 per 1000 per year	IPTc probably prevents some deaths	Moderate

### More information

#### This summary is based on the following systematic review:

Meremikwu MM, Donegan S, Sinclair D, Esu E, Oringanje C. Intermittent preventive treatment for malaria in children living in areas with seasonal transmission. *Cochrane Database of Systematic Reviews* 2012, Issue 2. Art. No.: CD003756.

[DOI:10.1002/14651858.CD003756.pub4](https://doi.org/10.1002/14651858.CD003756.pub4).

#### What is a systematic review?

A systematic review seeks to answer a well formulated and specific question by identifying, critically appraising, and summarising the results of all relevant trials, published and unpublished, according to pre-stated and transparent methods.

#### What is the Cochrane Collaboration?

The Cochrane Collaboration is an international network of more than 28,000 people from over 100 countries. The collaboration is one of the biggest producers of systematic reviews on the effects of healthcare interventions, and Cochrane Systematic Reviews are recognized internationally as the benchmark for high quality information. The *Cochrane Database of Systematic Reviews* is available from [www.thecochranelibrary.com](http://www.thecochranelibrary.com) and free for eligible countries.

#### How has the quality of evidence been assessed?

The quality of evidence has been assessed using methods developed by the GRADE working group ([www.gradeworkinggroup.org](http://www.gradeworkinggroup.org)). The GRADE system considers 'quality' to be a judgment of the extent to which we can be confident that the estimates of effect are correct. The level of 'quality' is judged on a 4-point scale. Evidence from randomized controlled studies is initially graded as HIGH and downgraded by one, two or three levels after full consideration of : the risk of bias of the studies, the directness (or applicability) of the evidence, and the consistency and precision of the results.

**High:** Further research is very unlikely to change our confidence in the estimate of effect.

**Moderate:** Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.

**Low:** Further research is very likely to have an important impact on our confidence in the estimate of effect and may change the estimate.

**Very low:** We are very uncertain about the estimate