

# **Efficacy of Zinc in the Management of the Common Cold in School Age Children at 4- 6 Years**

## **Thesis**

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## **Abstract**

**Background:** The common cold is one of the most widespread illnesses and is a leading cause of visits to the doctor and absenteeism from school and work. Trials conducted since 1984 investigating the role of zinc for the common cold symptoms have had mixed results. Inadequate treatment masking and reduced bioavailability of zinc from some formulations have been cited as influencing results.

**Patients and methods:** This study was a Prospective, interventional, single blind controlled study in school age children at 4-6 years attending outpatient clinic in governmental family health centre in Eltagamoia Elawal complaining of any symptom of common cold over 100 patients who were randomized to either Sulfozinc syrup or placebo treatment groups for the duration of their symptoms or a maximum of 5 days. The mean percentage change in total symptom scoring in day 3 and day 5 from baseline were compared between the two groups.

**Objective:** To study whether zinc is effective in reducing the severity, duration and complications of common cold symptoms in school age children at 4-6 years.

**Results:** The results indicate that symptoms resolved significantly faster in the Zinc group than in the placebo group ( $P < 0.05$ ). The mean percentage reduction in total symptom scoring from baseline in day 3 and day 5 was significantly greater in the Zinc group than in the placebo group.



**Conclusion:** We can conclude from our study that Sulfozinc is helpful in reducing the duration and severity of common cold symptoms in school age children (4-6 years).

**Keywords:** Zinc, common cold, school children

## *List of abbreviations*

GH	Growth Hormone
GHD	Growth Hormone Deficiency
NRC	National Research Council
RDA	Recommended Dietary Allowance
UNICEF	United Nations International Children's Emergency Fund
URI	Upper Respiratory Infection
USDA	United States Department of Agriculture
WHO	World Health Organization

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# INTRODUCTION



## **Introduction**

The common cold is one of the most prevalent acute illnesses worldwide. It is implicated in about 40% of time lost from employment and 30% of time lost from education (**Kirkpatrick, 1996**).

Most adults contract two to four colds per year, whereas children can have as many as 10 colds per year, producing substantial expenditure for physician office visits and over-the-counter cold and cough remedies (**Turner, 1997**).

More than one-third of patients who saw a doctor received an antibiotic prescription, which has implications for antibiotic resistance from overuse of such drugs (**Fendrick, 2003**).

The infection is self-limiting. It usually resolves within 7 days, but many colds persist for up to 3 weeks and are due to various viruses. There is no proven treatment for the common cold. However, even a medication that is only partially effective in the treatment and prevention of the common cold could markedly reduce morbidity and economic losses due to this illness. Available remedies act only to alleviate the cold symptoms (sneezing, nasal stuffiness and discharge, sore or scratchy throat, cough, hoarseness, headache, fever, and myalgia) and have no true therapeutic benefit toward eliminating the viral challenge. The complications of the common cold include otitis media, sinusitis and exacerbations of reactive airway diseases. (**Ronald, 2011**)



Although several possibilities have been suggested, it was found zinc inhibits rhinovirus replication in vitro led to the proposal of zinc as a treatment for the common cold (**Pappas, 2011**)

Oral zinc lozenges may be associated with sore mouth and occasional nausea (**Ronald, 2011**). Zinc nasal products, including homeopathic intranasal zinc gluconate, have been associated with long-standing or permanent loss of sense of smell and are not recommended for children (**FDA, 2011**)

It has been suggested that zinc salts may protect plasma membranes against lysis by cytotoxic agents such as microbial toxins and complement. (**Pappas, 2011**)

So this research was done to answer an important question that if zinc may reduce duration, severity of cold symptoms and prevent occurrence of complications of cold?



## **Aim of work**

### **Objectives**

To study whether zinc is effective in reducing the severity, duration and complications of common cold symptoms in school age children at 4-6 years.

### **Primary outcome parameter**

1. Effect of zinc on duration & severity of symptoms of common cold.
2. Effect of zinc on complications of common cold.

### **Secondary outcome parameters**

1. School absence (days) of patients with common cold & receiving zinc.
2. Antibiotic use in patients with common cold & receiving zinc.
3. Follow up for any new complaint with zinc treatment.

# REVIEW OF LITERATURE



## **Chapter 1**

# **CLINICAL PRESENTATION OF THE COMMON COLD**

### **Epidemiology**

Common cold is among the most common illnesses of humankind. The average incidence of the common cold in preschool children is five to seven per year but 10% to 15% of children will have at least 12 infections per year. **(Monto & Suulivan, 1993)**

Although rhinovirus continues to circulate at lower levels throughout the winter months, the season bracketed by these rhinovirus peaks consists of sequential and relatively discreet outbreaks caused by different viral pathogens. The seasonal incidence for parainfluenza viruses usually peaks late in the fall and late in the spring, and for and influenza viruses it is highest between December and April. An increased incidence of common cold symptoms is associated with each of these outbreaks. **(Monto & Cavallaro, 1971), (Ronald, 2011)**

### **Etiology**

Cold viruses that have numerous serotypes but produce lasting serotype-specific immunity after infection include rhinoviruses, adenoviruses, influenza viruses, and enteroviruses. Rhinoviruses (rhino, nose), with at least 100 serotypes, are the most common cause of upper respiratory infections in children and adults. **(Diane et al., 2009)**