

ORAL REHYDRATION SOLUTION (ORS) + ZINC AND DIARRHEAL DISEASE

Millions of children's lives have been saved by protecting them against diarrheal disease, yet it remains a leading killer of children under five years of age worldwide. By raising awareness about integrated prevention and treatment solutions, we can save millions more. Despite the fact that oral rehydration solution (ORS) with zinc supplementation is highly effective in the treatment of diarrheal disease, there is low awareness and uptake. Awareness and advocacy about ORS + zinc can help ensure no child dies from treatable diarrheal disease.

THE BURDEN

- ❶ Diarrhea can be life-threatening in children because their bodies are more vulnerable to rapid dehydration. Dehydration can kill within a matter of hours.
- ❷ Important nutrients like zinc that are key for healthy growth and development become depleted during a diarrheal episode. A vicious cycle of malnutrition and repeated infections is a common struggle for children who survive.
- ❸ Low awareness and barriers to access are obstacles to ORS + zinc use to treat diarrhea.

THE CONSEQUENCES

- ❶ Almost half a million children die from dangerous dehydration caused by diarrhea. Millions more are hospitalized, which is expensive and robs families of crucial income-earning activities.
- ❷ Limited guidance and availability of ORS and zinc encourages inappropriate use of antibiotics and contributes to growing antimicrobial resistance.
- ❸ In most countries, if they are listed at all, ORS and zinc appear individually essential medicines lists instead of bundled together:
 - ❶ Separate listings can result in an uneven supply and perpetuate low adherence to the recommended combined ORS + zinc treatment for diarrhea.

THE SOLUTIONS

- 1 ORS can be made at home by mixing of one liter of clean water, six teaspoons of sugar, and a half teaspoon of salt. ORS is also available in pre-mixed packets with instructions for adding water. ORS treats diarrhea by rehydrating the body with the fluids lost during a dehydrating diarrhea episode.
- 2 Zinc can be delivered as a syrup or a tablet dissolved in clean water or breastmilk and should be given for 10 to 14 days. Zinc reduces the duration and severity of diarrhea and can prevent future episodes for up to three months.
- 3 ORS + zinc is the cornerstone treatment for diarrheal disease and should be funded alongside other diarrhea control interventions, including vaccines; breastfeeding education and nutrition; water, sanitation, and hygiene (WASH); and research and development into innovative tools and approaches.
 - 4 The World Health Organization and UNICEF treatment guidelines for the management of childhood diarrhea recommend the use of both ORS and zinc.
 - 5 ORS reduces deaths from diarrhea by 69%.
 - 6 Zinc supplementation as an adjunct therapy decreases mortality or treatment failure by 40% and the duration of diarrhea by 25%, and it can protect against future diarrhea episodes for two to three months.
- 7 Oral rehydration therapy corners in local clinics:
 - 8 Provide quick access to ORS and zinc for severely dehydrated children;
 - 9 Raise awareness among parents about how to make and administer ORS and zinc at home; and
 - 10 Reinforce diarrhea prevention measures, such as exclusive breastfeeding and healthy hygiene habits.
- 11 Including an ORS/zinc co-pack on national essential medicine lists could improve combined treatment uptake and effectiveness and lower costs. Learn more at www.defeatdd.org/ORS-zinc-copack.

*PRIMARY RESOURCES:

Bhutta ZA, Bird SM, Black RE, et al. Therapeutic effects of oral zinc in acute and persistent diarrhea in children in developing countries: pooled analysis of randomized controlled trials. *American Journal of Clinical Nutrition*. 2000;72(6):1516–1522. doi:10.1093/ajcn/72.6.1516.

Countdown to 2030 Collaboration. Countdown to 2030: tracking progress towards universal coverage for reproductive, maternal, newborn, and child health. *Lancet*. 2018;391(10129):1538–1548. [https://doi.org/10.1016/S0140-6736\(18\)30104-1](https://doi.org/10.1016/S0140-6736(18)30104-1).

Lazzerini M, Ronfani L. Oral zinc for treating diarrhoea in children. *Cochrane Database of Systematic Reviews*. 2012;(6):CD005436. doi:10.1002/14651858.CD005436.pub3.

Munos MK, Walker CL, Black RE. The effect of oral rehydration solution and recommended home fluids on diarrhoea mortality. *International Journal of Epidemiology*. 2010;39 (Suppl 1):i75–i87. doi:10.1093/ije/dyq025

Strand TA, Chandyo RK, Bahl R, et al. Effectiveness and efficacy of zinc for the treatment of acute diarrhea in young children. *Pediatrics*. 2002;109(5):898–903.