

Dr Dilip Mahalanabis, who invented ORS, passes away

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Recently, Dr Dilip Mahalanabis, who pioneered the Oral Rehydration Solution (ORS), passed away.



[Ref-Abplive]

Dr Mahalanabis

- He studied in Kolkata and London, and joined the Johns Hopkins University International Centre for Medical Research and Training in Kolkata in the 1960s.
- He was working in **overflowing refugee camps during the 1971 Bangladesh Liberation war** when he came up with ORS.
- From 1975 to 1979, he worked in **cholera control for WHO in Afghanistan, Egypt and Yemen.**
- During the 1980s, he worked as a **WHO consultant on research on the management of bacterial diseases.**
- In 2002, he along with Dr Nathaniel F Pierce was **awarded the Pollin Prize by Columbia University** (considered the equivalent of Nobel in paediatrics).
- He knew that a **solution of sugar and salt, which would increase water absorption by the body**, could save lives.

Oral Rehydration Solution (ORS)

- Oral rehydration therapy is a **treatment for dehydration.**

- It involves drinking a **beverage made of water, sugar, and electrolytes, specifically potassium and sodium**. The beverage is called an **oral rehydration solution (ORS)**.
- The goal of oral rehydration therapy is to **replenish the body's fluid levels**.
- It's typically used to **treat moderate dehydration due to diarrhea, vomiting, or other conditions**.

How does an oral rehydration solution work for dehydration?

- In general, **mild dehydration** can be treated with fluids like water but for **moderate dehydration**, an ORS is ideal.
- In addition to water, **ORS contains specific amounts of glucose and electrolytes** such as **potassium and sodium**.
- These components **maximize fluid absorption in the gastrointestinal tract**.
 - The gastrointestinal **tract relies on sodium-glucose cotransporters (SGLTs)**, which are carrier proteins in the intestinal cells.
 - Cotransporters help move substances across membranes.
- Specifically, **SGLTs pair together sodium and glucose transport in the small intestine**. This allows glucose to increase the absorption of fluids.
- Additionally, **sodium needs glucose in order to be properly absorbed**. This is why ORS contains both glucose and sodium.

How to administer an oral rehydration solution?

- ORS is a liquid solution. It's **designed to be consumed by mouth**.
- If a person is unable to drink due to vomiting, nasogastric feeding might be used.
- This delivers the ORS via a **nasogastric tube**, which is **inserted through the nose and into the stomach**.