



# Device for Cerebral Edema Reduction

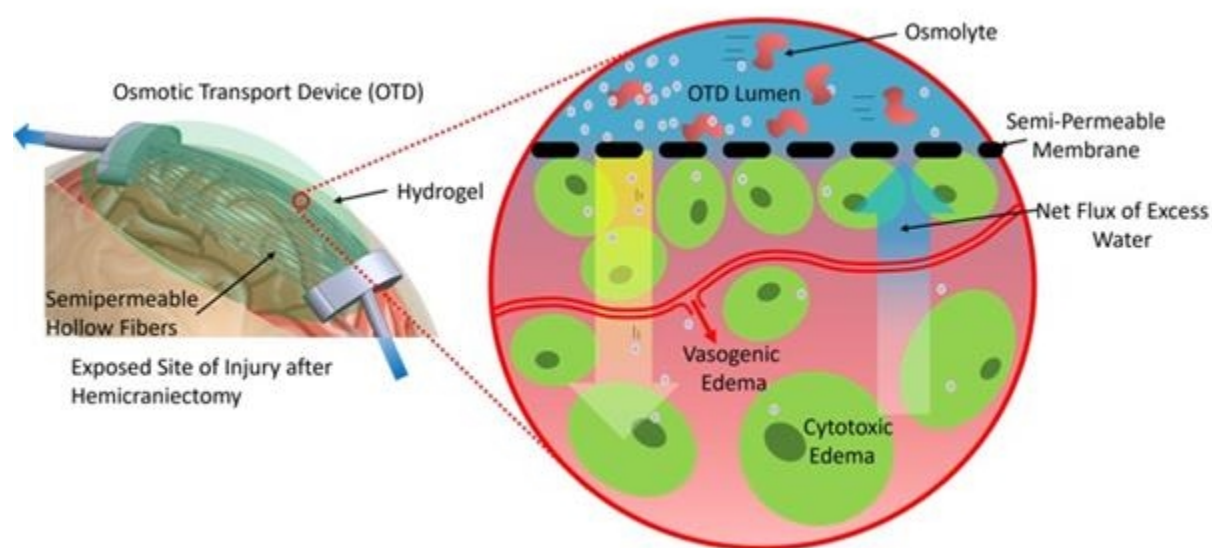
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## BACKGROUND

Both stroke and traumatic brain injury (TBI) can cause cerebral edema, which is an increase in brain tissue water content. Cerebral edema, if untreated, can lead to devastating damage of the remaining brain tissue as well as increased intracranial pressure (ICP). Recent studies suggest that alternative treatments are needed for treating cerebral edema as current treatments have limited success.

## BRIEF DESCRIPTION

Professor Victor Rodgers and his collaborators from the University of California, Riverside have developed a novel process and device for the direct treatment and reversal of brain edema and reducing ICP. The device uses a membrane process where a semipermeable membrane is placed in contact with the treated tissue, a support material, and a solution. The solution has properties that induce water flux where the removed water is carried away from the brain tissue using osmotic pressure. This technology is advantageous because it may decrease a patient's length of stay at ICU and improve the patient's quality of life.



## APPLICATION

- For clinical treatment of patients with cerebral edema.

## PATENT STATUS

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## OTHER INFORMATION

### KEYWORDS

Traumatic Brain Injury, Edema,  
Cerebral Edema, Edema Therapy,  
Stroke

### CATEGORIZED AS

- **Medical**
  - Devices
  - Disease: Central Nervous System

### RELATED CASES

2010-962-0

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	<a href="#">10,420,918</a>	09/24/2019	2010-962

RELATED MATERIALS

► [McBride, D. W., Szu, J. I., Hale, C., Hsu, M. S., Rodgers, V. G., & Binder, D. K. \(2014\). Reduction of cerebral edema after traumatic brain injury using an osmotic transport device. Journal of neurotrauma, 31\(23\), 1948–1954. <https://doi.org/10.1089/neu.2014.3439> - 12/01/2014](#)

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