

# CADENCE Balloon Shunt

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## Technology description

CADENCE is a novel, patented treatment platform that functions to alter cerebrospinal fluid (CSF) flow, increase cerebral blood flow (CBF), and modulate the intracranial pressure (ICP) wave through natural cardiac-induced dynamics. CADENCE can be visualized as an intra-aortic balloon pump for the brain and therefore functionally very distinct from a CSF shunt. For patients with hydrocephalus, the current method of passive shunting drains CSF and reduces ICP, but it does not directly address CBF.

CADENCE' s ability to alter CSF flow, increase CBF, and modulate ICP addresses clinical unmet needs that passive shunting cannot address. As an entry point for potentially treating a vast array of diseases associated with increased levels of CSF the inventors have shown preliminary proof-of-concept that the CADENCE system can actively and controllably improve CSF pressure pulsation and CBF in NPH animal models and normal brains.

## Institution

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