Breaking the Barrier to Brain Treatment

The Focused Ultrasound Foundation is seeking $250,000 to fund this trial.

Millions of people are suffering and treatment options are limited

Millions of people in the U.S. are suffering from serious brain disorders. Nearly 700,000 Americans currently have brain tumors, as many as 5 million have Alzheimer’s and approximately 1 million have Parkinson’s disease.

It is not currently possible to deliver some promising drugs in adequate concentrations to their targets within the brain due to a biological roadblock known as the blood-brain barrier. This protective layer prevents substances within the blood vessels from diffusing into the surrounding brain tissue. The benefit of the blood-brain barrier is that it restricts toxins and infections from entering the brain. Unfortunately, it also impedes important drugs.

Focused Ultrasound could break the barrier to treatment

Focused ultrasound is a new and groundbreaking, non-invasive, therapeutic technology which concentrates multiple intersecting beams of ultrasound through an acoustic lens to precisely target areas deep in the body. In pre-clinical trials, focused ultrasound has been used to temporarily open the blood-brain barrier without damaging the brain.

A team of experts at Sunnybrook Health Sciences Center in Toronto, Canada led by neurosurgeon Todd Mainprize, M.D., and physicist Kullervo Hynynen, Ph.D., are spearheading a first-in-human, pilot clinical trial. They will use focused ultrasound to open the blood-brain barrier in ten patients with malignant brain tumors in order to allow doxorubicin, an established form of chemotherapy, to be delivered directly in high doses to cancerous tissue. This trial will explore the feasibility and safety of temporarily opening the blood-brain barrier and delivering therapeutic agents to their targets once the barrier is breached. It is a predicate for using focused ultrasound to enable drug delivery for the treatment of other serious brain disorders including Alzheimer’s disease, epilepsy, and Parkinson’s disease.

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You can make a difference

We need your support to fund this groundbreaking research. Why give?

- You can be a driving force behind a new approach that could improve the lives of countless individuals.
- This is an opportunity to fund translational research to deliver already established cancer-treating drugs to their targets within the brain.
- Your gift can catalyze additional investment from industry, government and other philanthropies to carry the technology forward.

For more information:
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