

Detecting Brain Cancer Without a Knife

IMPACT PROFILE

Dr. Chen and Dr. Leuthardt of Washington University in St. Louis created a noninvasive technology to help diagnose brain tumors. They patented the technology and licensed it to Cordance Medical, who created the NeuroAccess™ device.

The Challenge

Brain cancer is the fifth most common type of cancer in the United States. This cancer is **difficult to diagnose and treat** because of the **blood-brain barrier** (BBB). Current diagnosis and treatment methods include risky and invasive procedures, like surgical resections, tissue biopsies, and lumbar punctures.

The Approach

Dr. Chen and Dr. Leuthardt created a noninvasive procedure called sonobiopsy to diagnose glioblastoma, a type of brain cancer. Sonobiopsy opens the BBB which facilitates liquid biopsies of tumor biomarkers. This study:

- Demonstrated sonobiopsy feasibility and safety in both mice and pigs
- Licensed and patented the technology to Cordance Medical
- Currently testing sonobiopsy for feasibility and safety in human glioblastoma patients

The Impact

This research created sonobiopsy to help diagnose glioblastoma in humans. The technology is currently being trialed in humans to ensure safety and efficacy for glioblastoma patients.

The technology was patented and licensed to Cordance Medical. Cordance Medical created the NeuroAccess™ device as a portable and noninvasive way to improve health care for patients with brain conditions, like Alzheimer's disease, Parkinson's disease, brain cancers, and other neurological diseases.

The team:

Hong Chen, PhD,
Eric Leuthardt, MD, MBA

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RESEARCH HIGHLIGHTS

The project resulted in:

- New **diagnostic procedure** for glioblastoma
- Increased **accessibility** to health care for glioblastoma patients
- New patent for sonobiopsy technology
- License agreement with Cordance Medical
- New **device** for opening the Blood-Brain Barrier

Key Benefits

The project resulted in **clinical**, **community**, and **economic** benefits.



CLINICAL

Sonobiopsy has the potential to perform biopsies for other conditions such as Alzheimer's disease, Parkinson's disease, brain metastases, and other neurological diseases.



CLINICAL

The sonobiopsy method was validated in humans in 2023 using high-grade glioma patients.



COMMUNITY

The sonobiopsy technique can enhance health care delivery as sonobiopsies offer potential for analysis for hard-to-reach brain tumors.



ECONOMIC

Dr. Chen and Dr. Leuthardt are listed as inventors for the sonobiopsy patent.



ECONOMIC

The sonobiopsy patent has been licensed to Cordance Medical.

Find out more:

[Visit the full case study](#)
[Chen Ultrasound Laboratory](#)

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