CREATING THE NEW NORM
The World’s First & Only Parafascicular Approach using a Trans-sulcal Access System

BrainPath® Approach
Supporting Minimally Invasive Parafascicular Surgery (MIPS)
Novel Surgical Approach

NICO technologies are part of a minimally invasive systems approach designed to be a deficit-sparing neurosurgical procedure that integrates advanced imaging with navigation-compatible intervention technologies to achieve minimally disruptive ACCESS, automated REMOVAL and standardized, intra-operative COLLECTION and BIOLOGICAL PRESERVATION of resected tissue.

WHAT WE DO

The BrainPath Approach integrates with navigation and optics to achieve minimally disruptive access.

Access the brain through the sulcus in a minimally disruptive way
Remove the lesion or hemorrhage using an automated tool
Collect in a closed-capture system and biologically preserve tissue for more comprehensive pathology and molecular analysis

Published Outcomes suggest that using the standardized BrainPath Approach and other integrated technologies contribute to improved clinical outcomes, which lead to better economic returns.

Evidence also suggests that the BrainPath Approach provides economic value for the hospital when analyzing the entire episode of care and supports healthcare’s commitment to achieving Triple Aim.

To learn more about technologies used in the BrainPath Approach, visit NICOneuro.com.

View independently published peer-reviewed evidence from more than 60 clinical papers and abstracts.

Follow news updates.

View surgical videos and patient stories.
HOW WE DO IT: ACCESS
The Way You Access Matters
to achieve improved clinical and economic outcomes

Safe access to the brain changes all decisions. The BrainPath Approach uses patented technologies to achieve minimally disruptive, navigable, trans-sulcal access through the subcortical space.

**BrainPath.** Innovative and uniquely engineered device used for parafascicular, trans-sulcal access:
- Primary and secondary brain tumors
- Vascular abnormalities and malformations
- Intraventricular tumors and cysts

**meniGLIDE™**
- Controlled opening of the meninges
- Blunt dissection from underlying structures
- Controlled incision along the superior membrane

**See how meniGLIDE works**

**See how BrainPath works**

**THE IDEA OF USING A TRANS-SULCAL ROUTE IS NOT NEW**
**THE TECHNOLOGY IS**

**Why use Trans-sulcal access?**
- All tissue is relevant
- Preserves healthy tissue during cannulation
- Minimizes disruption to pial tissue enroute to lesion

**Why use a Parafascicular approach?**
- Designed to minimize shear forces applied to primary white matter tracts using DTI imaging
- May reduce amount of brain transversed to each lesion
- Fiber tract preservation
SEE WHAT YOU WANT TO GET TO SAFELY REACH THE TARGET AREA

Post-operative images reveal one of the differences between conventional brain surgery and surgery using BrainPath.

ACCESS for ICH Evacuation using BrainPath

Trans-sulcal approach to ICH evacuation with ventricular extension using the Myriad (1:00)

Mobilization of large sulcal vessel prior to cannulation and ICH evacuation using the Myriad (1:06)

ACCESS for Tumor Removal using BrainPath

Trans-sulcal approach accessing Foramen of Monroe for colloid cyst removal using Myriad (3:03)

Trans-sulcal approach to MET resection using Myriad (3:12)

Trans-sulcal approach to Cav Mal resection in dominant side pre-motor using Myriad (4:17)

HOW WE DO IT: REMOVAL

Technology for Corridor Access

NICO technologies remove large tumors through small openings

Myriad™ - Automated Removal

1 Scissors 2 Suction 3 Blunt dissector

- Minimizes “in-and-out” of the surgical field
- User-controlled variable aspiration
- Tissue collection in a sterile, closed system

See how Myriad works

Automated Abnormality Removal

TRIOwand™ - Hemostasis Control

1 Irrigation 2 Variable suction 3 Coagulation

- First integrated fluid management system for intracranial use
- Single-use, hand-held device

See how TRIOwand works

BrainPath Ultrasound Probe: Intraoperative, Real-Time Imaging

Used inside the BrainPath sheath to visualize landmarks and confirm:

- Vascularity
- Lesion position
- Tumor roll

See how the BrainPath Ultrasound Probe works

BrainPath Ultrasound Probe by Hitachi Healthcare.
Overcoming small corridor barriers

**PURSUING THE GOAL OF GROSS TOTAL RESECTION**

Applying the Principles of Microsurgery with BrainPath

**Removal of Tumors and ICH using BrainPath**

**WORKING IN AIR MEDIUM**
- Colloid Cyst Removal (3:02)
  - Air medium vs a fluid-filled environment for resection and hemostasis management using the BrainPath Approach

**DIRECT VISUALIZATION**
- Cavernous Angioma Removal (4:16)
  - Extracorporeal HD imaging enabling equal light delivery to the surgical field during surgery using the BrainPath Approach

**BI-MANUAL TECHNIQUE**
- Intracerebral Hemorrhage Evacuation (1:06)
  - Enabling a two-sucker technique with automated resection during surgery using the BrainPath Approach

**HEMOSTASIS CONTROL**
- Brain Metastasis Removal (3:12)
  - Room for bipolar coagulation and view of the surgical site during surgery using the BrainPath Approach

**HOW WE DO IT:**

**COLLECTION & BIOLOGICAL PRESERVATION**

Automated & Standardized
Intra-operative Tissue Harvesting and Biological Preservation

- Closed-capture system provides real-time, immediate refrigeration for desired thermal conditions
- Ability to infuse/perfuse tissue creates the desired biological environment, which may aid tissue hydration
- Heterogeneity of abnormalities can be accounted for due to increased quantity of tissue obtained
- Enables the ability to capture and annotate tissue with correlation to specific intratumoral location for potential further advancements in personalized medicine

Meeting Today’s Modern Neuro-Oncology Needs

**Step 1**
Automates the tissue collection process

**Step 2**
Enables correlation of resected tissue samples to intratumoral location

**Step 3**
Enables the efficient collection of greater tissue volume, the desired biological environment, and thermal conditions which may enable the pursuit of personalized medicine protocols of healthcare institutions

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2. Intra-operative tracking of instrumentation (e.g., Myriad handpiece) is achieved using third-party equipment (refer to its labeling for proper use).
3. Proper segmentation of tissue areas require clearing/flushing the handpiece prior to changing the filter.
WHY WE DO IT: PATIENT OUTCOMES
Conventional Surgery vs BrainPath Approach

WHAT PATIENTS WANT MOST IN THEIR OWN WORDS

ICH: Most Deadly, Costly & Debilitating Form of Stroke

Tumors: Account for 85-90% of all Primary CNS Tumors

OUTCOMES ACHIEVED
CLINICAL & ECONOMIC
PUBLISHED EVIDENCE

Independently Published PATIENT OUTCOMES
Tumor Removal Data

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>45%</td>
<td>Decrease in ICU LOS, the most expensive venue in a hospital</td>
</tr>
<tr>
<td>99%</td>
<td>Cases with zero reported complications N=214</td>
</tr>
<tr>
<td>0</td>
<td>Reported Leptomeningeal Spread N=258</td>
</tr>
<tr>
<td>0</td>
<td>Surgical related mortality N=292</td>
</tr>
</tbody>
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Vascular Treatment Data

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease in ICU LOS</td>
<td>4 vs 12 Days</td>
</tr>
<tr>
<td>Median Clot Removal</td>
<td>98.2%</td>
</tr>
<tr>
<td>In 63% of Patients</td>
<td>mRS &lt;3</td>
</tr>
<tr>
<td>ICTUS to Surgery</td>
<td>&lt;20 Hrs</td>
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Independently Published ECONOMIC DATA

$12,000 Increase per Patient in Impact to Bottom Line

Economic Benefit WebEx
An Economic Analysis of the BrainPath Approach in Neurosurgery

Presented by Sid Norton Executive Director VP, Budget & Finance Children's Hospital of Cincinnati

ECONOMIC RETURN
Better Care for Individuals
Lower Cost Through Improvement Better Health for the Population

ECONOMIC REBUILD
The Triple Aim of Healthcare

Featured on Cover of NEUROSURGERY
Clinical outcomes associated with using NICO technologies and a standardized trans-sulcal, parafascicular surgical approach to address ICH and tumor removal have the support of peer-reviewed published evidence.

BETTER PATIENT EXPERIENCE using a standardized approach

<table>
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<th>Description</th>
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<tr>
<td>Significant reductions in the ICU length of stay improves the patient experience of care</td>
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<tr>
<td>Patients in both ICH and tumor receive surgical intervention as treatment that previously would not have been eligible</td>
<td></td>
</tr>
</tbody>
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*In four of the above featured patient stories, it was the surgeon's first time using the BrainPath Approach for tumor removal or hemorrhagic stroke clot evacuations.

All citations are located on back cover. **Aggregated data from *1-19; data on file.

Not all products shown may be available in all regulatory jurisdictions. Consult your local representative, distribution company, or customer service for the latest product offerings.