

REAL-TIME

INTRAOPERATIVE

bk5000 NEUROSURGERY

NEUROSURGICAL IMAGING

- Dedicated intraoperative ultrasound system for neurosurgery with a simple workflow and small footprint
- Fully sterilizable neurosurgery transducers that can make direct contact with the brain and dura
- Immediate, auto-optimized imaging using the No-touch Autogain and Auto Focus features
- Exclusive digital integration with Brainlab neuronavigation systems for full plug & play experience

**bk**   
medical

# REAL-TIME GUIDANCE FOR YOUR NEUROSURGICAL SUBSPECIALTY

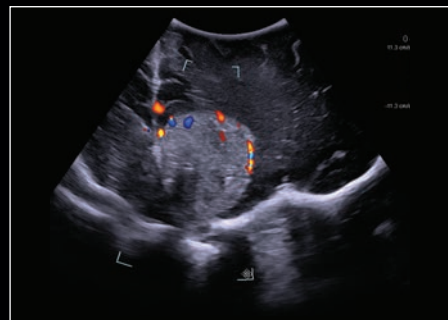
Intraoperative ultrasound with bk5000 enables you to more easily identify lesions and anatomical structures. Navigate with confidence and make decisions with support from immediate, auto-optimized images. See below how intraoperative ultrasound can enhance your surgical procedure.

## NEURO-ONCOLOGY

- Assist in the identification of **brain shift** after pre-operative scans
- Spare eloquent areas of the brain during tumor resection surgery
- Determine extent of resection and assess for residual tumor
- Identify nearby blood vessels



Glioblastoma  
N13C5 Craniotomy Transducer



Falx meningioma with color Doppler  
N13C5 Craniotomy Transducer



Metastatic lesion  
N13C5 Craniotomy Transducer



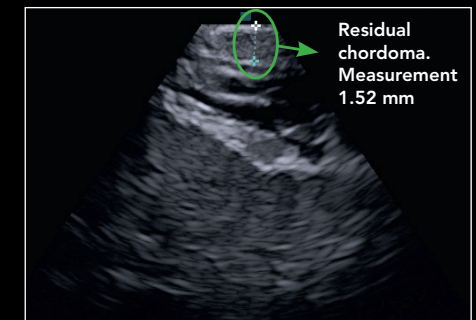
High-grade tumor  
N13C5 Craniotomy Transducer

## ENDONASAL SKULL BASE

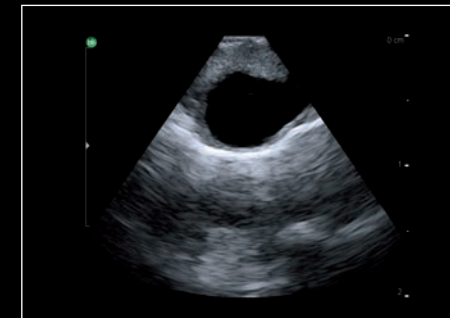
- Identify blood vessels near the pituitary gland
- Access hard-to-reach areas to understand the true location of the lesion
- Monitor resection progress and assess for residual tumor



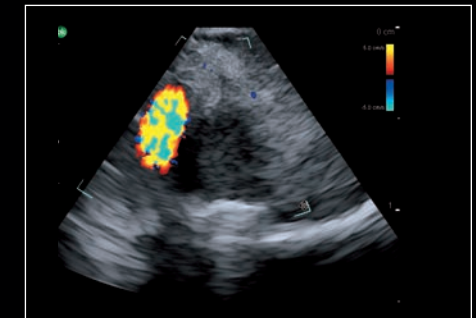
Partially resected chordoma with color Doppler (basilar artery)  
N20P6 Minimally Invasive Transducer



Residual tumor  
N20P6 Minimally Invasive Transducer



Pituitary cyst  
N20P6 Minimally Invasive Transducer

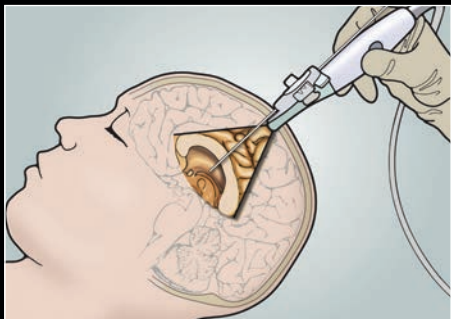


Pituitary microadenoma adjacent to internal carotid artery  
N20P6 Minimally Invasive Transducer

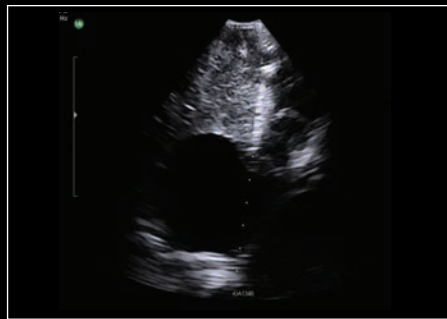
# ACTIVE IMAGING FOR ACTIVE DECISION-MAKING

## PEDIATRICS

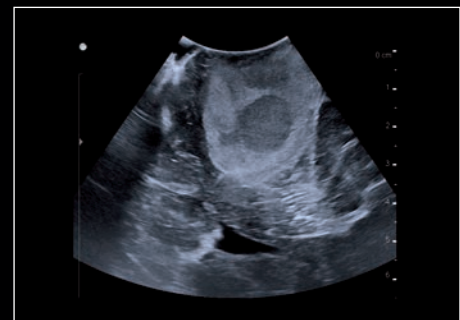
- Guide safe, quick shunt placements, with accurate detection and targeting of the ventricle using needle-guidance
- Reduce medical imaging hazards such as radiation while assessing for brain shift and monitoring tumor resection



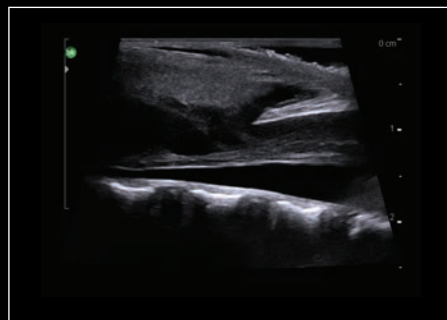
The Burr Hole Transducer's extended field of view enables wide imaging of brain anatomy and assists with safe shunt placement.



Enlarged ventricles - shunt placement  
N11C5s Burr Hole Transducer



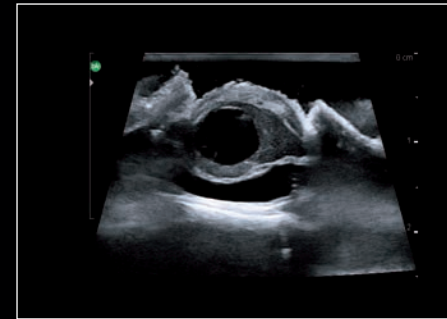
Pediatric temporal lobe brain tumor  
N13C5 Craniotomy Transducer



Shunt placement, pediatric spine  
X18L5s Hockey Stick Transducer

## SPINE

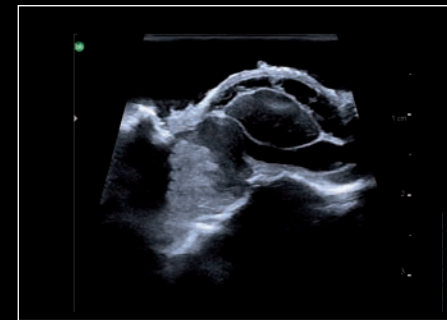
- Reduce incision dimension, intraoperative fluoroscopy, and number of laminectomies<sup>1</sup> with immediate visual feedback
- Confirm degree of decompression of neural structures<sup>1</sup>
- Guide screw insertion<sup>1</sup>



Arachnoid cyst c-spine  
X18L5s Hockey Stick Transducer



Intradural spinal cord lesion  
X18L5s Hockey Stick Transducer



Metastatic lesion adjacent to spinal cord  
X18L5s Hockey Stick Transducer



Benign spinal cord lesion. Sagittal plane  
N13C5 Craniotomy Transducer



# DEDICATED NEUROSURGICAL ULTRASOUND SOLUTION

## bk5000. FUNCTION AND SIMPLICITY IN DESIGN

- **More Detailed Anatomy:** BK's Prism technology generates high-resolution, real-time images.
- **Immediate, Optimized Images:** No-touch Auto-gain and Auto Focus features eliminate need for manual adjustment.
- **Neurosurgeon Controlled:** Sterilizable remote control for convenient control of the system in the sterile field.
- **Small Footprint:** Scanner design integrates seamlessly into the OR.
- **Powerful Battery:** Rapid boot time and up to two hours of plug-free imaging.



## SPECIALIZED TRANSDUCERS DESIGNED FOR NEUROSURGERY

- Sterilizable transducers with long cables (up to 2.2 m / 7.3 ft).
- Smart Button™ enhances physician control with quick transducer activation and freezing/storing images.
- Disposable, easy-to-use needle guides assist with catheter placement procedures.



**Burr Hole Transducer N11C5s** has deep penetration and a small footprint to guide burr hole procedures with precision, including shunt placements and biopsies.



**Craniotomy Transducer N13C5** has outstanding image quality with a wide field of view and deep penetration, enabling an overview of the lesion and anatomy, and helping determine adequacy of lesion removal.



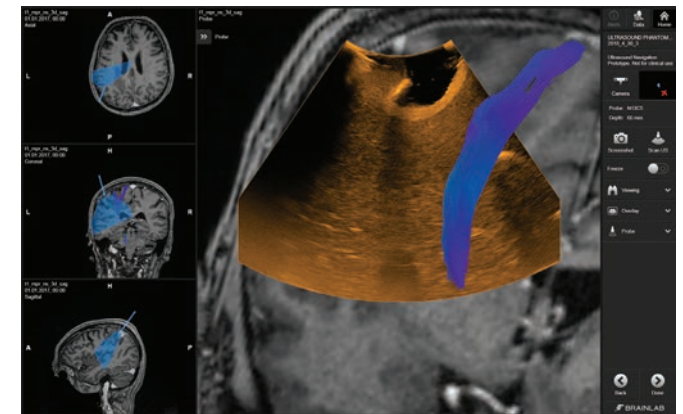
**Hockey Stick Transducer X18L5s<sup>2</sup>** provides excellent resolution in the extreme near-field. It is ideal for use in spinal procedures and within cranial resection cavities as its flexible tip can be adjusted to 0°, 30°, 60°, and 90° positions.



**Minimally Invasive Transducer N20P6<sup>3</sup>** is BK's smallest transducer making it ideal for accessing hard-to-reach areas in endonasal skull base, cranial endoport<sup>4</sup>, and spinal procedures.

## EXCLUSIVE DIGITAL INTEGRATION WITH BRAINLAB

- Brainlab Ultrasound Navigation Software provides updated and accurate images for instant navigation.
- Real-time overlay of ultrasound imaging on pre-operative MRI/CT supplies immediate information about brain shift.
- Integration facilitates scanning and reconstruction of 3D ultrasound data faster than intraoperative MR and CT.
- Digital transmission ensures no loss of ultrasound image quality.



Ultrasound Navigation Software showing a live, intraoperative ultrasound scan overlaid onto pre-operative MR.

<sup>2</sup>Use of the Hockey Stick Transducer X18L5s for intraoperative (neuro) has not been CE-marked.

<sup>3</sup>The Minimally Invasive Transducer N20P6 has not been licensed by Health Canada or CE-marked; N20P6 is compatible with bk5000 software version 5.16.2 and higher.

<sup>4</sup>The Minimally Invasive Transducer N20P6 is compatible with NICO BrainPath® (diameters 11-13.5 mm; lengths 50-95 mm), Vycor ViewSite™ Brain Access System (widths: 12-28 mm; heights: 8-20 mm; lengths: 3-7 cm), and Neuroendoport® (diameters greater than 13 mm; lengths: 5.5-8.5 cm).



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