

# NeuroNexus

## NeuralGlider Inserter

### Introducing the NeuralGlider Inserter by Actuated Medical:

Experience seamless neural implant insertions with the NeuralGlider Inserter! Our cutting-edge device uses ultrasonic micro-vibration to significantly reduce forces and prevent dimpling during procedures.

#### Key Features:

- **Versatile Testing:** Proven effective in vitro, ex vivo, and in vivo with various neural implants.
- **Precision Control:** Allows for slow (0.1 mm/s) and accurate insertions.
- **Tissue Integrity:** Minimizes displacement and dimpling of the cortical surface, preserving the integrity of the underlying neural tissue.

Elevate your neural implant procedures with the NeuralGlider Inserter—precision and care, perfectly combined.

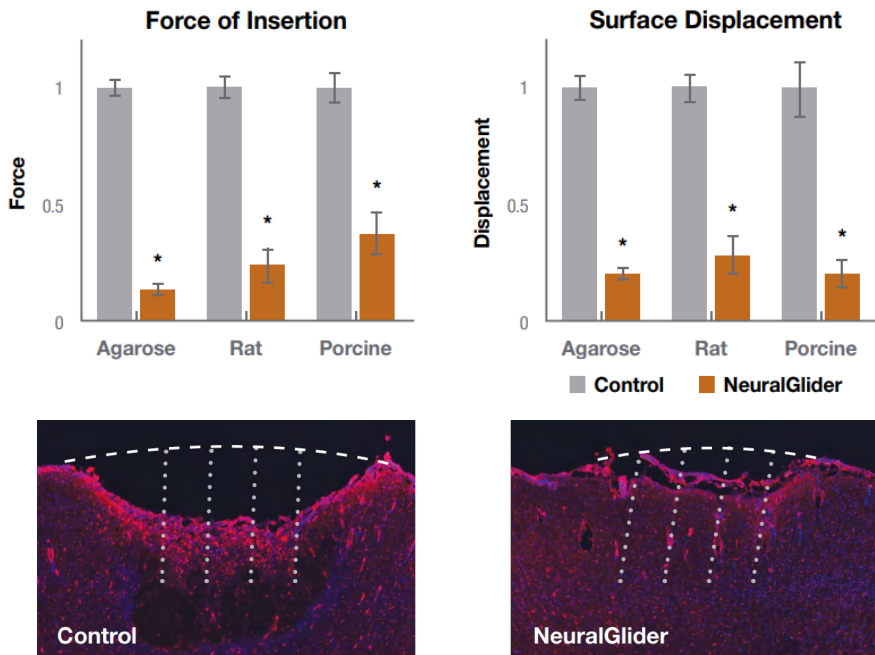


### Say Goodbye to Cortical Dimpling

- **Reduces Insertion Force:** Ultrasonic micro-vibration during insertion reduces the force needed to penetrate the brain surface.
- **Improves Accuracy:** Facilitates slow (0.1 mm/s or slower), precise array insertions while minimizing dimpling or tissue displacement.
- **Preserves Tissue Integrity:** Slow and accurate insertions with minimal tissue displacement lead to a better signal-to-noise ratio compared to conventional methods.
- **Integrated Software:** Controls insertion velocity and depth for optimal results.
- **Consistent Insertions:** Standardizes electrode insertions, eliminating variability and ensuring reproducibility across experiments.
- **Wide Compatibility:** Custom coupling solutions for various commercial and homemade neural implants. Rental or purchase includes engineering support to develop a coupler for your specific needs.

Upgrade your neural implant procedures with the NeuralGlider Inserter for precision, consistency, and superior tissue preservation.

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Ultrasonic vibration of microwire arrays during insertions with NeuralGlider significantly reduced penetration force in an agarose brain model, and ex vivo rat and porcine cortex (reductions in force = 86.3%, 76.5% and 62.7%, respectively). The reduction of force correlates to a 70 - 80% reduction in cortical surface displacement/ dimple during array insertion, for all tissues. \*p < 0.0001; error bars = standard error of the mean. All data were normalized to the non-vibrated/control insertion average for each tissue.

Compared to a standard control insertion (left), NeuralGlider reduced cortical surface damage and blood brain barrier leakage (IgG staining, red) at the microwire array insertion site (right). Images showed 20  $\mu$ m rat cortical sections, 2 weeks after implantation with 2x4, 50  $\mu$ m microwire arrays.

### NeuralGlider vibration allows Matrix arrays to be fully inserted at slow velocities

