The NeuroPace RNS® System: Responsive Neurostimulation

- Cranially implanted neurostimulator connected to 1 or 2 leads implanted at the seizure focus
- Neurostimulator provides stimulation through leads in response to detected electrocorticographic activity
- Records and stores selected ECoGs

CAUTION--Investigational device. Limited by United States law to investigational use.
The RNS System: Programmable Responsive Neurostimulator

- Neurostimulator and Leads
- Physician Programmer
- Patient Data Management System

- Neurostimulator data transmitted to an interactive web-based patient database
  - accessed online at any time to view detection and stimulation
- Patient retrieves data from the neurostimulator and sends it to PDMS for physician review

- Electroctorigram sensed and stored
- Abnormal brain electrical activity detected with electrodes implanted near seizure focus
- Targeted stimulation delivered responsively at the time of detection
RNS® System Pivotal Trial

• Study Design
  ‣ Randomized, double-blinded, sham-stimulation controlled trial
  ‣ 191 subjects implanted across 32 U.S. centers

• Study Objective
  ‣ To demonstrate the safety and effectiveness of the RNS System as an adjunctive therapy in reducing the frequency of seizures in individuals 18 years of age or older with partial onset seizures from no more than two foci that are refractory to two or more antiepileptic medications

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RNS System Pivotal Trial: Mean Disabling Seizures, Observed Data (N=191)

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Adverse Events in Pivotal Trial

- No difference between Treatment and Sham groups in rate of any specific AE during the Blinded Evaluation Period
- Device related serious adverse events that affected more than 2.5% of subjects at any time during trial were implant site infection (3.7%), increase in complex partial seizures (3.1%) and increase in tonic clonic seizures (2.6%)
- Six subjects died; 1 from lymphoma, 1 subject with a history of depression committed suicide and 4 were attributed to SUDEP
Seizure reduction is sustained over years:
Long-Term Follow-Up, All Trials

Responder Rate and Median % Reduction by 3-Month Periods
(LTT Study, 2-6 Years Post-Implant)

- Responder Rate
- Median % Reduction

Data as of May 12, 2011.

Decreasing N reflects times of enrollment; mean follow-up 3.3 years

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Results of the RNS System Pivotal Trial: Summary

• Subjects receiving responsive stimulation had
  ▶ Significantly reduced seizure frequency
  ▶ Improved quality of life and mood at 1 and 2 years
  ▶ Improvement in some aspects of cognition
• Favorable safety experience in 191 patients/340 implant years
• The RNS System provides sustained seizure reduction in subjects with severe partial epilepsy of long duration and a history of multiple treatment failures
• PMA currently under FDA review