Hypothesis – TLD with the NuVaira™ Lung Denervation System disrupts pulmonary parasympathetic nerves in locations distal to TLD treatment as demonstrated by loss of HBR.

Methods – 2 dogs and 2 sheep underwent circumferential ablation of both main bronchi using a lung denervation system (NuVaira™, Inc., USA).

- Each bronchus of 2 sheep and 2 dogs underwent TLD with the NuVaira™ System
  - The study was conducted under the guidance of an Institutional Animal Care and Use Committee in accordance with the study facility IACUC and Animal Welfare Act of 1965
  - Each bronchus (n = 8) underwent 8 sequential RF activations evenly spaced around the circumference of the airway (octants)
  - Prior to, acutely following, and 7 days following TLD therapy, each was tested for presence or absence of the HBR in locations in the lung proximal and distal to site of denervation.
  - Hering-Breuer Reflex was measured with a custom built test system described below.

Results – The vagal mediated Hering-Breuer response was abolished in locations in the lung distal to TLD treatment.

Conclusion – TLD successfully disrupts HBR in healthy canines demonstrating a physiological response to lung denervation.